



RADIO
Retailing
TODAY

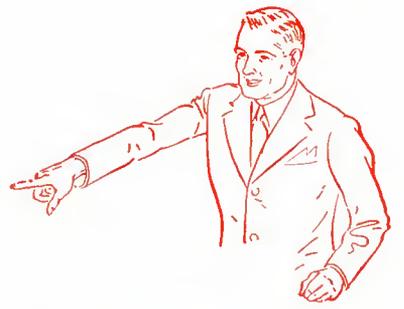
RADAR

Buy War Bonds

JUNE

IN TWO PARTS — PART ONE

PROTECTORS OF AMERICA!



Will You Pinch Hit

It is getting hard in many communities to service home radio sets properly in order to "keep 'em listening."

The shortage of radio service engineers is acute—the military forces have priority on radio technical skill.

But, those of you who remain on the home front have the chance of a lifetime to render important service to your community. Make a list of the names of all the "old timers" you can remember. See and talk to each one. Chances are they're still radio "bugs" and will be willing and anxious to help if told of the need that exists.

Organize a service club in your community... see to it that every bit of existing knowledge is put to work. We will help you. Now is the time to pinch hit to "keep 'em listening." Will you do your part?

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



Approved Precision Products



He was only a kid . . . on duty with the Signal Corps on an island in the South Pacific. Jap ships came one night . . . plastered the American installation . . . destroyed the communications hut where he was stationed. With a shattered leg this kid dragged himself to his battered equipment . . . through some miracle found it still functioning . . . was soon sending the orders of his commanding officer to American shore guns. Yes, the men of the U. S. Signal Corps have got what it takes to "get the message through."

They've Got
WHAT IT TAKES...



We Make What They've Got

When men like these are willing to give their all, how can we at home do less than our best? For many months both great Admiral plants have been working night and day turning out the vital communications equipment that is helping the men of the Signal Corps "get the message through."

CONTINENTAL RADIO & TELEVISION CORPORATION, CHICAGO, U. S. A.

Peacetime Makers of

Admiral **RADIOS**

AMERICA'S SMART SET

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 product. 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.



It's going to be the Jobber!

There's a Billion Dollar market waiting for those who make and sell radios.

Ten million radios wore out the first year after Pearl Harbor. This figure will have doubled itself by July, 1943. This will represent approximately *one-third* of the present radios in the United States!

But that's just part of the picture. The war has created a *new mass market*. Millions of war workers are restlessly waiting for the hour when they can walk into a store and buy a radio set. It figures to be a Billion Dollar market, mister. Make no mistake about that!

Sonora's big 1943 national advertising campaign is keeping this famous

name right up in front of the responsive readers of America's top magazines: Life, Esquire, The American Weekly, Redbook, Time, American Home, Cosmopolitan, American Magazine . . . a combined circulation of 54,200,000.

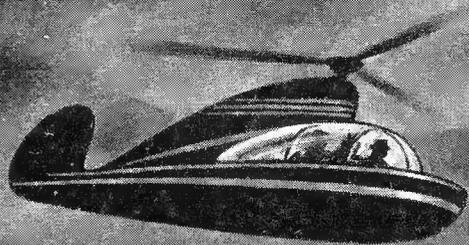
Among all nationally advertised radios, Sonora's set-up is *the only one* that always was custom-made for the jobber's benefit. In the future as in the years gone by you can be sure—with SONORA — IT'S GOING TO BE THE JOBBER!

SONORA RADIO & TELEVISION CORPORATION
325 NORTH HOYNE AVENUE • CHICAGO

Sonora
Clear as a Bell



You flick a
switch up here . . .



SAY you're "dropping in" unexpectedly on the Joneses for a visit some evening. Their "landing yard" is dark, so you push the button in your plane, and—presto!—the landing lights flash a welcome, and you alight smoothly and safely.

That's one of the logical and fascinating applications for radio remote control devices that you and I will need in the new age of flight that's dawning. There'll be countless others.

And so, while Jackson engineers are

working overtime on America's number one job, they're also planning ahead, thinking about the test equipment that will be needed to build, service, and maintain communications equipment, servo-mechanisms, and other powerful electrical tools of tomorrow's world.

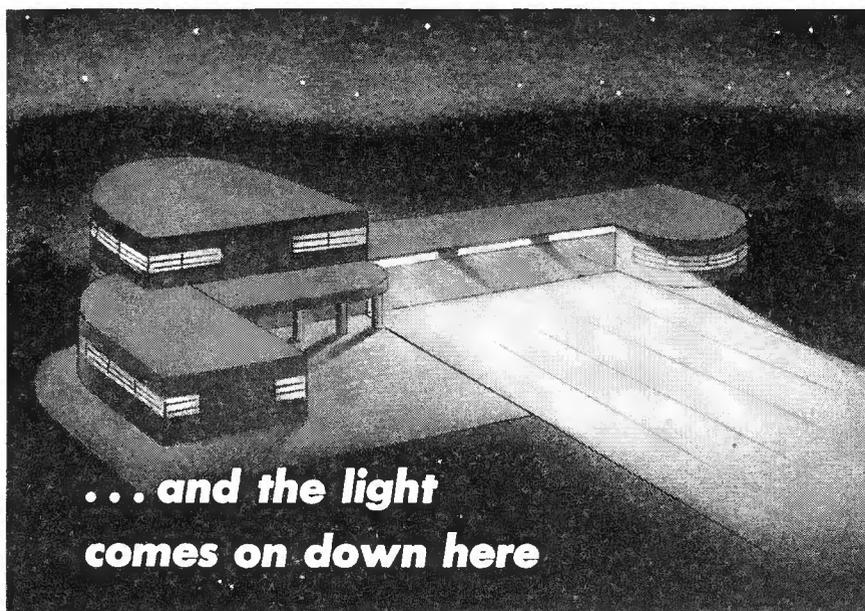
Much of our present line of tube testers, oscillators, signal analysers, multimeters, etc., will change; some of it will not. In any case, it will be fine equipment, soundly engineered, sold at fair prices.

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


JACKSON

Fine Electrical Testing Instruments

JACKSON ELECTRICAL INSTRUMENT COMPANY, DAYTON, OHIO



. . . and the light
comes on down here

RADIO *Retailing* TODAY

JUNE, 1943

featuring

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PART TWO
OSCILLOSCOPE SERVICING

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ORESTES H. CALDWELL
Editor

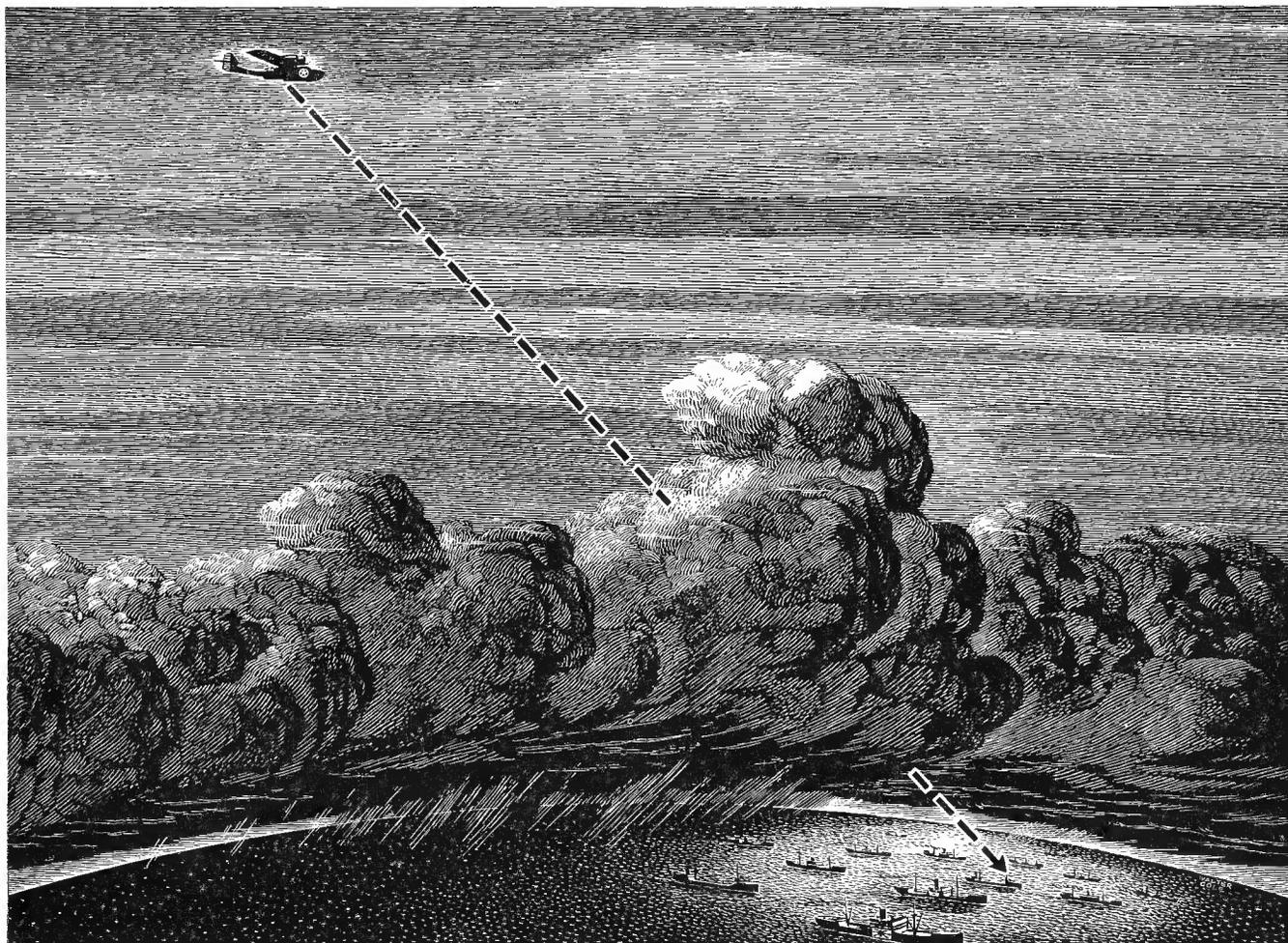
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RADAR, the secret weapon, tells the story of PHILCO at war!

When the Army and Navy released the secret of *Radar*, the sensational story of Philco's vital contribution to Victory was officially revealed. Radar, the fabulous weapon that pierces fog, storms and darkness and seeks out the enemy beyond the range of human eyes and ears, is one of Philco's major war assignments.

Throughout its overwhelming leadership in radio, Philco laboratories *pioneered* in the science of ultra-high frequency radio waves, upon which Radar is based. When the Jap struck, Philco was ready to answer the

call of our fighting forces for "*impossible*" deeds of Radar development and production. Today, theirs is the most dramatic story that has yet been told from the annals of war production.

Even more important will be the peacetime sequel to these Radar achievements. In radio, television, refrigeration and air conditioning, only the future can reveal the untold progress that will appear under the famous Philco name . . . and the greater opportunities that will unfold to appliance dealers in the *Philco All Year 'Round* franchise.

PHILCO CORPORATION



OUR WAR PRODUCTION PLEDGE: **MORE • BETTER • SOONER**



The Peacetime ^{*}Habit that Went to WAR...

^{*}RADAR-RADIO-ELECTRONICS PIONEERING

Emerson AT WAR

RADAR • RADIO • ELECTRONICS

In RADIO, in RADAR, in many phases of ELECTRONICS—in Detecting, Transmitting and Receiving Apparatus for land, sea and air—Emerson is designing, developing and manufacturing in the QUALITY tradition, measuring up to the highest Army and Navy standards—ENOUGH and ON TIME.



THE "HABIT" of PIONEERING — the imagination and skill and drive that made Emerson the LEADER in Home Radio—is in there now, pitching for the inevitable VICTORY.

Engineers, specialists, expeditors—trained workers with vastly increased manufacturing facilities—are beating schedules, piling up new delivery records every month.

It is generally accepted that "if it's EMERSON made, it will serve, and serve you well." Experience has proved it!

New techniques, new discoveries, new methods learned

*will Serve Again on
a Grander Scale!*

SEE THE NEW
Emerson
RADAR
RADIO ELECTRONICS



Emerson OF TOMORROW

RADAR • RADIO • ELECTRONICS

Small Radio, Television, F. M. and other Sound Recording and Electronic instruments are included in Emerson's constructive plans for the future. Each of those products will be in keeping with the needs and opportunities of the times. Incalculable possibilities lie ahead.



in wartime production will add even greater lustre to Emerson Radar-Radio-Electronics of the future.

Shifts from wartime to civilian manufacture will be rapid, orderly—and REALISTIC. We are "telling the world", ahead of time, what to expect from this war-matured organization.



In the great days ahead the Emerson Distributor and Dealer franchise will be an increasingly valuable asset. *Preserve it—with confidence.*

Emerson

RADAR • RADIO • ELECTRONICS



EMERSON RADIO AND PHONOGRAPH CORPORATION • NEW YORK, N. Y.



For 32 years Magnavox has been serving the radio industry. Now our engineering skills and factory facilities, which have made such important contributions to radio, are concentrating on winning the war.

Magnavox

TAKE OUR WORD FOR IT—the new Magnavox factory is an excellent plant . . . six acres under one roof . . . facilities, talent and resources to handle anything in the communication and electronic field.

With engineering skill amplified and production capacity increased we are able to exceed the enviable achievements already made by our organization in war work.

As prime and sub-contractor Magnavox has set many new records. Some facilities are again available for additional contracts. Write, phone or wire. The Magnavox Company, Fort Wayne, Indiana.

MAGNAVOX IS NOW WORKING FOR THESE BRANCHES OF SERVICE:



The skill and craftsmanship which won for Magnavox the first Navy "E" award (and White Star Renewals) among radio receiver manufacturers, has served the radio industry capably for 32 years.

ARMY—Air Corps . . . Signal Corps . . . Ordnance

NAVY—Aeronautics . . . Ordnance . . . Ships

COAST GUARD

MARINE CORPS

MARITIME COMMISSION

expands facilities

SOME OF THE EQUIPMENT MAGNAVOX IS MAKING FOR THE GOVERNMENT:

Army and Navy Radio Receivers

Aircraft Interphone Communication Equipments

Battleship Speaker Amplifier Announcing Systems

Loud Speakers for All Purposes

Motor Driven and Hand Operated Antenna Reels

Aircraft Carbon Microphones

Tank Receiver Head Set and Microphone Equipment

Sound-Slide Projectors for Military Training

Radio Detection Equipment Radio Direction Finders

Electrolytic Filter and By-pass Capacitors

Firing Controls Arming Controls

Magnavox

The Great Voice of Radio

COMMUNICATION AND ELECTRONIC EQUIPMENT

Keep that Fight in Your **TURNER** Mike



carl e. graham
1224 Remondale St. W.
Canton, Ohio
phone 33579

April 3rd

The Turner Co.,
Cedar Rapids, Iowa

Gentlemen:

I donated a P. A. system for use during a Greek Benefit show, held in Loews' theatre before 2500 persons and after what happened, I wonder who received the most benefit--Greece, or the Turner Co.

22-D microphone, serial #7687, purchased last Saturday, the day of the benefit, was knocked into the orchestra pit by the first act, with 19 more acts to follow.

It caromed off a musician's head, which, in itself, is enough to wreck anything, then disappeared thru the door leading to the basement.

When returned to the stage, and found to be in working order, the M. C. not only gave me a "plug," but, stopped the show and told everyone that the mike was a Turner Dynamic, etc. and where to buy it.

I tried to smooth out the damage done to the bezel and grill, but am returning the unit; replace the bezel and you might check the unit, although it seems to be all right.

C. O. D. it when returning and, if possible, rush it.

Very truly yours,
Carl E. Graham.

Le-Vee Precision Sound Equipment



TURNER
Model 22-D

Turn to Turner---for a Mike with "Built-In" Fight

Whatever your need for a Microphone, you can be sure of complete satisfaction under any acoustic or climatic condition when you specify Turner. Thousands of satisfied users can vouch for the rugged construction, the accurate response and superb performance of Turner Microphones under the toughest usage.

Today's Turner Microphones are being used for vital war communications, in War Plants, Airdromes, Ordnance Plants, Docks, Army Camps, Broadcasting Studios, Police Transmitters and other highly sensitive spots where accuracy is essential. **IF YOU HAVE A HIGH PRIORITY RATING**, you can still buy Turner Microphones. Write today, explaining your problem, and we will help you select the Turner unit best suited to your needs.

The **Turner**
Company
CEDAR RAPIDS, IOWA



GET THIS *free* TURNER CATALOG

... Write now to obtain your Free copy of Turner's new 8-page, fully illustrated, colorful Microphone Catalog. Select the one you need, at the price you want to pay.
Turner Crystal Microphones licensed under patents of the Brush Development Co.



**I WASN'T WORRIED WHEN
I KNEW THEY WERE *RAYTHEONS!***

We were really in a tough position . . . if our messages did not get through I could not help but think of all the things that would happen to all of us.

Then I remembered the tubes used in my communications equipment were RAYTHEON tubes, because I had been a serviceman and knew tubes . . . knowing I had dependable RAYTHEONS backing

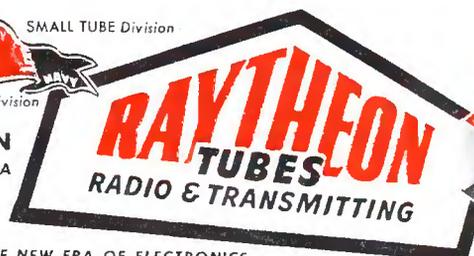
up my messages gave me plenty of courage . . . I knew RAYTHEON tubes always gave me exceptionally good performance, even under unusual conditions . . . RAYTHEON quality never varied!

Today, thousands of RAYTHEON employees are tirelessly working to supply vitally needed tubes to our boys on all the fighting fronts!

Four "E" Awards



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

RADIO Retailing TODAY • June, 1943



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

Any Plan That Will Clip Three Seconds Off the Duration

Considerable trade discussion has centered around the operation of the Electronic Research Supply Agency, 460 Fourth Ave., New York City, which has been formed as a central source of supply for critical electronic components needed in wartime development and research work. ERSA will supply these units only to those government, institutional and industrial laboratories operating under government contracts in research and development.

Radio parts distributors are anxious to continue their job of supplying all possible parts to these labs, and have sometimes regarded ERSA as an unnecessary government-sponsored factor in the business. They are naturally sensitive to any plan which they believe might tend to short-circuit the established distributor, and in some cases they have expressed the fear that ERSA might continue in postwar operation.

Freezing Brand Standards

Some manufacturers have also objected to the ERSA setup because they feel that by becoming a key supply source in development work, ERSA might set the brand standards for units that would reach the mass production stage at a latter date.

On the ERSA side are these items: This non-profit agency was set up at the request of WPB and at the instance of the Army, Navy, and the Office of Scientific Research and Development. Orders for small quantities of parts for development work were holding up vital production schedules. ERSA, we are told, plans no branch offices and actually recommends ordering through existing local distributors. So far, ERSA has found most brand names already specified when orders reach it. It has no postwar plans any more than any other war emergency outfit. Finally, it is headed by a radio man who is universally respected, Maurice Despres, himself a radio and appliance distributor.

Put an End to Government Operation

Any incursion of Government into business is to be viewed with distrust. The new Electronic Research Supply Agency naturally shares this scrutiny. It may serve a useful war purpose. But when the emergency has passed, we believe it should make way for private distribution. Radio already suffers too much from the long grasp of Federal intervention.

New Down-to-Business Trend Takes Over in the Trade

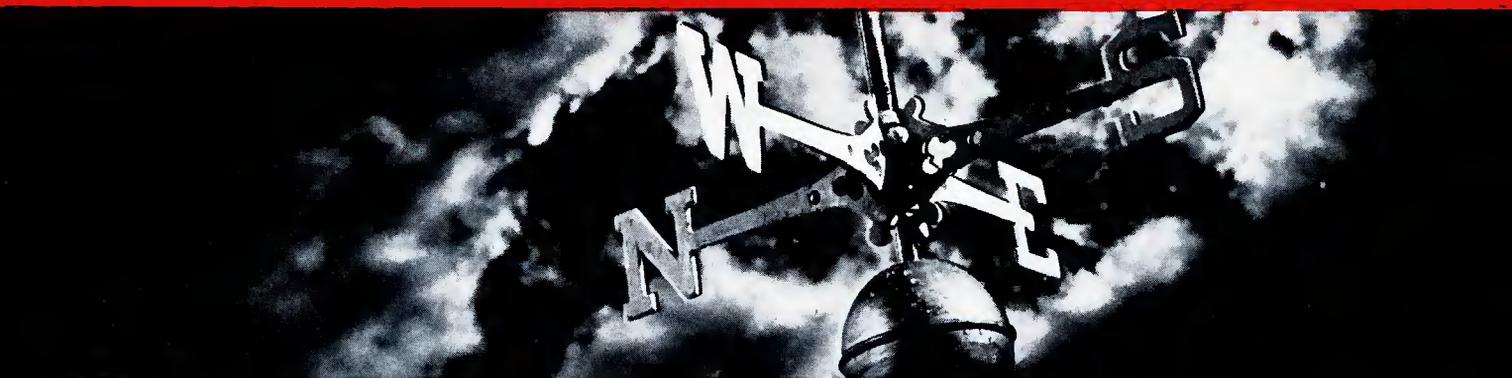
Each month we get new reports and letters from dealers and servicemen, for one reason and another. But this month the sentiment seemed to run to things which speak well indeed for the ingenuity and enterprise of dealers and servicemen.

So-and-so alternate lines were being added; circuits were being changed to save tubes, new delivery policies were being worked out, merchandise was being swapped, facilities were being pooled, etc., and the total tone was one of war-winning ACTION.

It seemed that for this period at least, there was less of complaint and more of compliance; less roar and more resourcefulness.



Storm Warning for Postwar



Ewing Galloway

● Wartime restrictions and regulations have left an indelible impression on radio men.

But, from this wartime operation many lessons may have been learned, from which many advantages may stem in the future. When this war has been won, as it most certainly will be in the not distant future, it will be quickly seen how well the lessons have been learned, and it will soon be apparent how these lessons get results.

Manufacturers certainly have learned how to build more radios to higher specifications than ever before. And they have learned, too, that Army and Navy inspectors are more critical buyers than the dear old public ever thought of being.

Now that the radio manufacturers have learned how to build really fine quality equipment on a bigger scale, it may well be hoped that the home radio of the future will follow the

Wartime Merchandising Lessons Toughen the Retailer for Postwar Adjustment

pattern of *quality* rather than *price*.

If this wartime lesson of quality has been learned, it will have a profound effect upon radio retailing and servicing of the future. Prices will be higher, of course. But a tremendous buying power has been built up, which with the pent-up demand for new radio, will offer no obstacle to sales at much higher prices.

Cooperation

Higher prices, too, mean increased dollar margins on which the dealer will work. Perhaps it is too much to hope that *all* dealers keep their margins. There will be many who will quickly cut and slash their prices in a

mad scramble for their "volume." But there are ways of handling that situation, too.

Perhaps the greatest lesson which the war has taught radio retailers is cooperation, with ingenuity and diversification close seconds. These are indeed, lessons which the radio dealer should learn well and profit by. Our





Recent victory in North Africa is a glowing tribute to cooperation and coordination. American, British, French and New Zealand Armies acting in concert, air force, artillery, armored forces and infantry coordinated into perfect team work. The result was inevitable. From that lesson radio men may learn much and profit greatly.

It is not too early to set up the means of effective, continuing cooperation. Radio dealers everywhere should use their new wartime contacts with other dealers to form local, county, state and national associations to make cooperative effort practical and effective.

Form Associations

Banded together in an organization the collective strength may be such as to give weight to their demands, and quickly discipline those who would tear down *all* for the temporary advantage of a few. A *real* cooperative organization may go much farther than a friendly, "social," or pre-war "association." It may well be patterned after the great "Co-ops" of the middle and far west, which buy, warehouse, advertise and service for all.

There are many advantages which will accrue to dealers who unite in such a cooperative organization, of which "profit insurance," price maintenance and "fair trade" practices are not the least.

Diversification

And then comes the lesson of diversification. Certainly many radio dealers have learned *that* lesson thoroughly. Many dealers will go back to their pre-war setup, in which appliances, sporting goods, cameras, records or musical instruments or combinations thereof were most common companions of radio, in retailing. Others

will just add radio to their present lines and go ahead from there. Some will consider the future of radio and television bright enough to confine their efforts exclusively to radio. It is probable that postwar radio alone will support a dealership.

But look at the record of "one line" merchants for the past 15 years, regardless of the "line," and compare it with the multiple line stores. Compare radio retailers who handled only radio, with dealers who handled other lines, too. Almost invariably it will be found that the "department store" dealer did the better job, had the better store, made more customers and more money.

Ingenuity

And then the lesson of ingenuity. This is almost as important as cooperation, though much harder to define and to explain. It has many names and many expressions. It's that quality of thinking clearly, acting swiftly and working surely to meet every changing condition as it arises.

It is planning for what you *think* is coming, and being able to meet anything that *does* come. It may be that which "sells refrigerators to Eskimos" or hangs out the "Main Entrance" sign while adjacent neighbors have

a "Great Sale." It is in fact the ability to analyze *any* situation accurately, think fast, and come up with a solution to the problem, unique or otherwise. And radio men have sure had to be ingenious to remain in business the last year.

Servicemen, particularly, with parts difficult or impossible to obtain, have had to be "ingenious" to put their sets back into operation, and the record they have turned in is a great one indeed.



Ingenuity will come to the fore in postwar radio because it is probable the economic pattern will undergo some more acute and perhaps rapid changes from what is hoped for and is planned on.

Postwar Control

Some government controls will be relaxed, some new ones imposed. Many will remain for a long time. They will have a varying effect on business which cannot be foretold, precisely.

Unemployment will increase fast as Victory shuts down the war industries, and that too, is a force which cannot now be accurately estimated. The speed with which industry can return to civilian production is not yet known. Beyond question, the first five years after the final armistice will place a great premium on ingenuity in the guiding of the radio business. But the training has been ample, the lessons plenty—if radio men have learned and will profit by them.

Cooperation—Diversification—Ingenuity—these are the great wartime lessons—and vital ingredients in postwar radio retailing success.

Three great wartime lessons the alert retailer learned will do much to enable him to keep his business balance during the postwar period:

- 1. COOPERATION**
 - 2. INGENUITY**
 - 3. DIVERSIFICATION**
-

Summer Crescendo in of "Quality"



• As the curtain rises on the summer selling season, dealers are finding an increased call for the opera recordings, symphony music and classical and semi-classical recordings in wide variety. Many have found the demand to be twice the supply.

Never before have record sales been so high for any previous corresponding period of the year. Charles Purdue of Purdue Radio Co., Montclair, N. J., reports their season for records usually began with the end of summer, continued through the fall and reached a crescendo with the Christmas holidays. Last Christmas' sales, they claim, never slacked, but sales steadily continued, until now they are selling more discs than for any corresponding period in past years.

Value of Self-Selection Reported by N. J. Dealer

Established for many years as a radio company in Montclair, Purdue's put in records when they first became popular, and now discover this stock occupying more and more space. Floor racks are used to display, as well as conserve space, and Mr. Purdue points out this showing has a way of selling more albums. He claims customers allowed to browse usually buy not only the selections they came for, but discover and purchase others they come across that strike their fancy in this very complete type of display.

Purdue's further underscore the

Metropolitan Opera star Grace Moore as she appears in the title role of "Manon." Miss Moore's "Souvenir Album," recorded for Decca (No. A-165), is a favorite.

Classic and Semi-classic Discs

popularity of the classics by their experience in currently featuring Beethoven's Fifth Concerto. A mere window strip announcement of the purely informative type was enough to bring the customers into the store in droves.

Wide Variety in Field

The large recording companies find the continuous demand for the better type of music quite general throughout the country. War has made us a nation of stay-at-homes this summer, and shortage of batteries for portable radios makes the portable phonograph the center of entertainment at this summer's backyard garden picnic. Music for mother and dad may be the Philharmonic's rendition of a classic, while son and sis will have

Window of Newman's Record Shop in Philadelphia. Columbia Recording Corp. artist. Featured



Sales Records

Claim the Spotlight

their own recording of Eddy Duchin's arrangement. Catering to all tastes in arrangement of the classic and semi-classic pieces, records provide pleasure for all, and the music that people want *when* they want to hear it.

Scrap Remedies Shortage Preserves Morale

In a nation as war-conscious we have become, scrap drives continue, and gain momentum throughout the country. It is to the dealer's distinct advantage to do all he possibly can to help in this work, both in the organization and active participation of record scrap collecting. In so doing he is not only helping himself to increased record sales, but he has the knowledge that he is doing all he can

phia, displaying albums of Andre Kostelanetz, Ferde Grofe's "Grand Canyon Suite," No. M-463.



Frequent guest star on the networks, Gladys Swarthout of Metropolitan Opera fame records for RCA Victor, who are currently featuring her album of Show Hits, No. M-935.

in this line, a solemn patriotic duty. Increased record sales, for him as an individual, contribute to his remaining in business as a retailer, and the preservation of retail businesses throughout the nation means the preservation of vital civilian morale.

Petrillo Ban

The current existing ban imposed by the American Federation of Musicians on recorded music has not affected the sale of records to any great extent. Forewarned of the deadline of August 1, 1942, to cease recording with union musicians, manufacturers had their engineers and talent work in shifts throughout a 24-hour day right up to midnight of July 31st, recording the arrangements that are being sold this summer.

The Brunswick Collectors' Series,

distributed by Decca, is an example of very successful use of reissuing of original recordings during the earlier popularity of performers still at the top of the record-buying public's list. These come under the semi-classical group of the better popular music. The success of the Gladys Swarthout Show Hits album, recorded by Victor, is another instance of the public's interest in finer recordings of this type.

War Workers Go to the Opera

The choice range is wide in operatic and symphony recordings. After a shift in the war factory, workers find relaxation in listening to symphony music. Opera albums are equivalent to an evening at the opera itself without the traveling and preparation re-

(Continued on page 52)



P.A. SPEEDS PRODUCTION



Up-to-the-Minute Use of Sound Equipment in New Jersey War Plant Again Proves Value of Music in Boosting Victory Output

• The use of "industrial sound" in war production continues to expand as more and more uses are found for the public address systems installed in factories.

Radio men who are in the business of installing and servicing P.A. units are now able to collect considerable scientific data, proving that a factory sound system is a war-winning device.

In addition to its contribution to the war effort, P.A. will doubtless enjoy wide acceptance in peacetime factories, and due to its achievements in stepping up war production, it will be readily accepted by postwar manufacturers to be used by them for the same purpose it serves today.

Widespread use of sound has established beyond doubt its importance to workers, and the manner in which they receive this innovation has al-

ways been described as highly satisfactory.

Basing their employment of P.A. upon the success of installations in commercial enterprises, even banks have joined the ranks of users, as will be seen from an article elsewhere in this issue, and they too have found the utmost satisfaction in its use.

P.A. War-Winning Device

One of the newest reports comes from Tung-Sol Lamp Works, Newark, N. J., where a complete P.A. system has been installed in two manufacturing plants. The fundamental idea is that factory-played music has a real tendency to lessen fatigue, boredom, tension and strain among the workers.

In combatting these four "bug-a-boos" with swing- and -sway tactics,

Tung-Sol found five other important uses for public address, making the installation serve a six-fold purpose, with all the uses vitally important to stepped up production by the workers.

Many Uses

The equipment includes an automatic record player, radio and FM, and these, of course, take care of the musical needs. The other five uses are:

2. The system provides a complete air-raid and fire alarm warning setup.

3. P.A. is used extensively to stimulate labor-management activities.

4. Appeals for Red Cross and sale of War Bonds effectively carried over the system.

5. Personal messages, such as birthday greetings, with the familiar "happy birthday" song, are good will

Left: Girls in the Mount Department of Tung-Sol's war plant helping Harry James put across "I Had the Craziest Dream."

builders, and are appreciated by the workers.

6. Every morning the names of new employees and the departments in which they work are announced. This introduces them to their fellow workers, and has a good effect upon the morale of the employees.

The musical programs for the day shift are played 10 to 12 minutes out of every half hour, starting on the hour and half hour. This provides music for about one-third of the day. It has also been found that longer musical schedules are more effective for the night shift, and music is therefore provided for about 15 minutes out of every half hour, or one-half of the working time of the night shift.

Takes Place of Assembly Hall

Tung-Sol has no assembly hall, so the use of P.A. solved the problem for them. When important messages, having to do with labor-management need to be conveyed to the workers, this system is used; the messages get to the workers in an effective and interesting fashion.

In this method of giving employees necessary information, no time is lost going to and from meeting places, nor is the worker asked to go to some central place of assembly to hear these messages on his own time. The use of



P. A. eliminates the necessity for using printed bulletins, which always present the possibility of being overlooked, or scanned too hurriedly by the worker, and it is a well known fact that the conscientious employee does not like to use working hours for bulletin reading, nor does the company expect him to do so after his workday is over.

The activities carried on via P.A. at Tung-Sol are handled by a special committee on "Labor-Management, Morale and Publicity." Specially appointed employees act as announcers, perform various tasks in Tung-Sol's studio.

Good Natured Rivalry

One of the most favored features among the workers at Tung-Sol is



Lower left: Telephone operator and receptionist uses public address system for paging individuals, and for air raid and fire drill instructions. Above: Employee ballots her hit tune of the week; workers look forward to Friday selection. Top right: Operator of the record-player puts on a new disc.

the Friday afternoon "hit parade," when the twelve top tunes that the employees have requested during the week, are played. The requests for the favorite numbers are dropped in boxes, suitably lettered and placed in various positions in the plants.

Popular music, new and old, is requested by employees, who seek to have their favorites played, thus stimulating a good natured rivalry, with different age groups and different tastes in music participating. Tung-

Sol, realizing the importance of allowing the workers to select their own music, finds that this method is the most advantageous to use, in utilizing sound to produce more and better implements of war for the men at the fighting fronts.

Not only does the company value the increased effort on the part of its employees, but feels that it is developing priceless good will by making working conditions more interesting and less monotonous to these workers.



SEE RADAR SET FOR PEACETIME ROLE

Electronic "Echo" Employed by United Nations to Stymie Axis to Become Mighty Geni in Many Phases of Work When War Is Over

• Radar, modern electronic marvel now in the service of the United Nations, and up until recently a zealously guarded secret, will become one of our most valuable servants when it is retired from war service after peace has been achieved.

In describing its marvelous uses and its origin, the official U. S. Navy report quoted herewith, will whet the mental appetite of the alert radio man. That Radar will have important roles in peacetime electronic pursuits is foreseen by experts in the armed forces, industry, and government.

"The swift development of Radar electronic equipment as a weapon against the Axis will be followed, when victory is achieved, by use of

our new knowledge of electronics in building peacetime industry," says Ray C. Ellis, director of the Radio & Radar Division of WPB.

"After the war," continues Mr. Ellis, "development in the field of ultra high frequency radiation will be channeled to dozens of new uses. Food preservation, automatic control of machinery, fire detection, regulation of lighting, and other uses are being found. This is expected to bring forth large new industries, and already is changing the techniques of old ones."

Dr. E. F. W. Alexanderson, consulting engineer, General Electric Co., writing of Radar in its early stages says: . . . "Since then other advances in the field have been made,

some of which, after the war is over, undoubtedly will contribute to the security and comfort of a world at peace."

Official Report

Establishing beyond the shadow of a doubt that preliminary research and development of "radar" originated in the United States through the work of two naval scientists, the Navy Department statement reviews the history and subsequent development of the device which has been credited with revolutionizing many of the offensive and defensive tactics of war.

Tracing the primary research on radar back to mid-September, 1922, the Navy credits two research scientists, Dr. A. Hoyt Taylor, now Su-

Aircobra by Bell Aircraft Corp. firing tracer bullets into the night sky. Allied air strategy depends greatly on radar.

perintendent of the Radio Division of the Naval Research Laboratory, and Leo C. Young, now assistant superintendent of the same division, with the original observations and theories, obtained while working in the Naval Aircraft Radio Laboratory in Anacostia, D. C., which led to the perfection and current widespread use of "radar." The statement also cited that in 1940 members of the British Technical Mission stated that the British development of radar had resulted from articles reporting the preliminary work of Dr. Taylor and Mr. Young.

The Navy statement declared: "The discovery of Dr. Taylor and Mr. Young, more than 20 years ago, was the birth of radar. Their imaginative, searching preliminary suggestion marked its first possible military application."

While working in the Naval Aircraft Radio Laboratory in Anacostia in 1922, both scientists, observing that certain radio signals were reflected from steel buildings and metal objects and that ships passing by a transmitter and receiver at such frequencies gave a definite interference of pattern, suggested that "possibly an arrangement could be worked out whereby destroyers located on a line a number of miles apart could be immediately aware of the passage of an enemy vessel between any two destroyers in the line, irrespective of fog, darkness or smoke screen."

Design Special Apparatus

The Navy's statement noted that despite the pressure of other work, and the discouraging factors which face the pursual of most research work, Dr. Taylor and Mr. Young continued their trail. Between 1925 and 1930 both men, working in conjunction with Doctors Gregory Breit and Merle A. Tuve of the Carnegie Institute, and with the assistance of L. A. Genhard and M. H. Schrenck, used the reflection phenomena observed in 1922 to measure the height of the Kennelly-Heaviside layer, an atmospheric formation which acts as a reflector for certain beams. During this time, the naval scientists also measured the time required for radio signals to go around the world by reflection from the Kennelly-Heaviside layer. For this purpose, extremely

brief radio signals were used, and special apparatus was designed to both transmit and receive the shortened signals. L. A. Hyland, now vice-president in charge of radio of the Bendix Corporation, who was associated with the two Navy scientists during this early work, observed in June, 1930, that aircraft crossing a line between a transmitter and receiver operating directionally gave an interference pattern clearly indicating the presence of such aircraft.

In November, 1930, a report prepared by Dr. Taylor on "radio-echo signals from moving objects" which

PEACETIME USES FOR RADAR

The billions of dollars expended upon radar for war are bound to have tremendous influence on future designs of all ultra-shortwave transmitters, tubes, antennas and cathode-ray television technique. But radar itself may have direct post-war uses such as:

SAFEGUARDING SHIPS in fog, against collisions, icebergs

PROTECTING PLANES against mountain-top crashes

MEASURING FLYING HEIGHT above ground

DETECTING PLANES approaching in fog

PATROLLING HARBORS against smugglers

SURVEYING through underbrush and obstacles

MEASURING HEIGHT of ionosphere layers

MEASURING DISTANCE of nearby astronomical objects

summarized all observations made prior to that date, presented the theory underlying the observed phenomena and recommending that the investigation be continued and intensified, was submitted by the Director of the Naval Research Laboratory to the Chief of the Navy Department's Bureau of Engineering. And

on January 19, 1931, after thorough study of Dr. Taylor's report, the Radio Division of the Bureau of Engineering assigned the Naval Research Laboratory the following problem: "Investigate the use of radio to detect the presence of enemy vessels and aircraft. Special emphasis is placed on the confidential nature of this problem." Meanwhile, the theory of reflection from moving objects had been confirmed by experiments conducted in cooperation with the dirigible Akron.

Signal Corps Takes Part

At this stage in radar's development the Navy's observations were brought to the attention of the War Department, and on January 9, 1932, the Navy's findings were turned over to the Army with the suggestion that the Army might set up a system of transmitters and associated receivers around a defense area to test its effectiveness in detecting the passage of hostile aircraft into the area.

The Army Signal Corps immediately engaged in the development of the use of radar at its Signal Corps Laboratories at Fort Monmouth, N. J., and in further research towards its military usages. Major General Roger B. Colton (then Colonel), who is now chief of the Signal Supply Services, was then in charge of the Signal Corps Laboratories and directed this work.

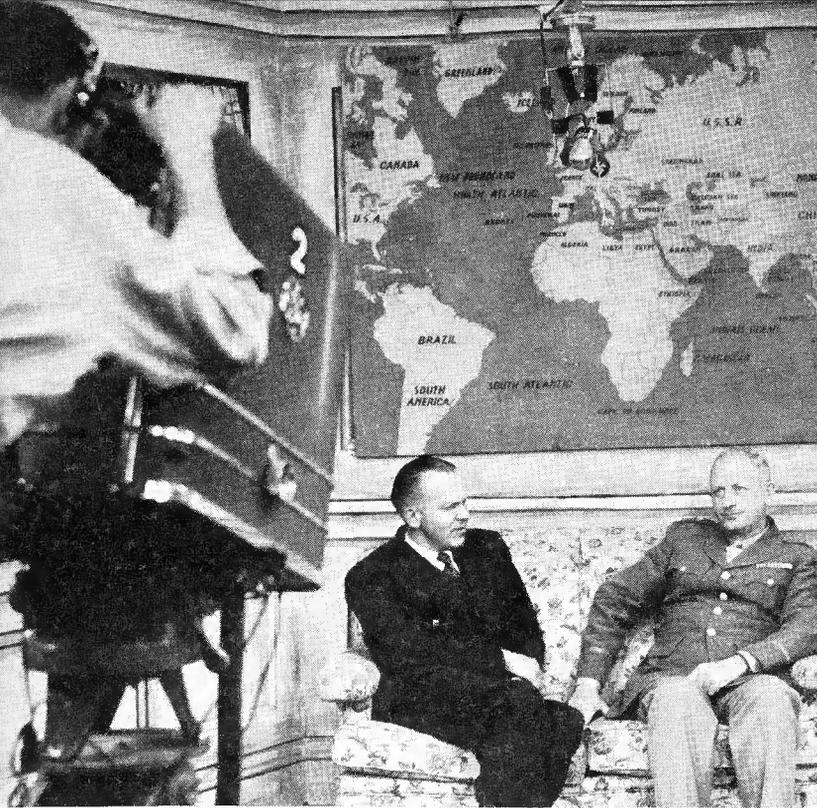
Continuing to trace the Navy's role in the development of radar, the statement noted that in July, 1932, airplanes in motion nearly 50 miles from the transmitter had been detected under certain conditions, and that work began on instruments for the collection, automatic recording and correlation of data to show position, angle and speed of objects in the air. The development of the first instruments of this nature are credited to Robert M. Page of the Naval Research Laboratory, with the assistance of Robert C. Guthrie, both of whom have been constantly engaged in radar research and are responsible for many of the radar developments now in use by the Navy.

Funds for Radar Research

By the end of March, 1933, various types of apparatus and systems of radar had been developed to a degree which enabled the Naval Re-

(Continued on page 50)

RADIO



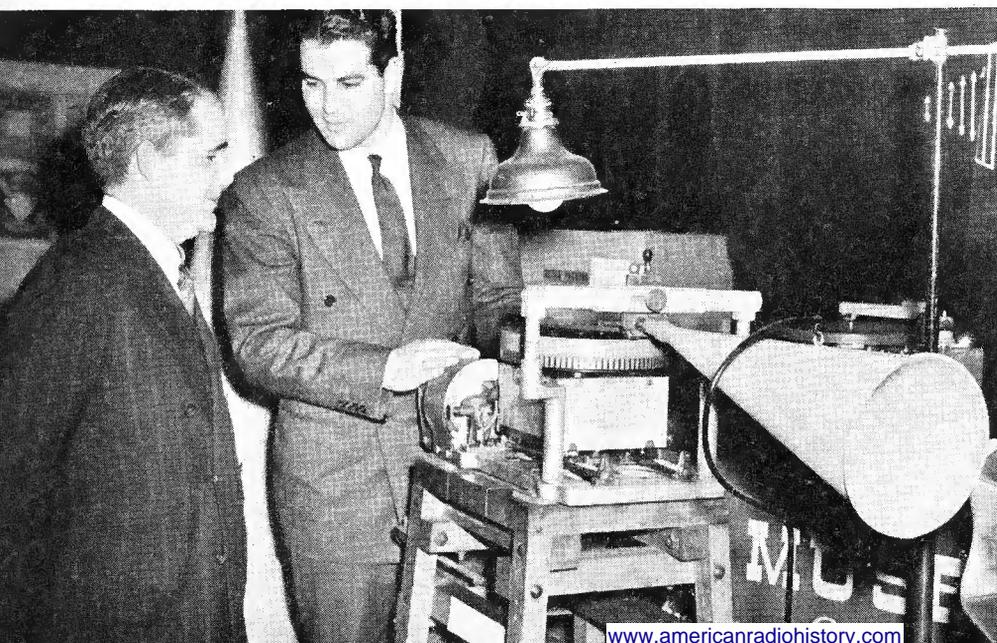
▲ One of the "men on a raft," Col. Hans Christian Adamson recounts his adventure over GE's television station WRGB, Schenectady. Benny Goodman vocalist Peggy Lee displays a wartime glass-base recording disc made by H. & A. Selmer, Inc. of Elkhart. → "World Front" program in action over Crosley Corp.'s WLW, Chicago. Third right is INS editor Barry Faris, guest.



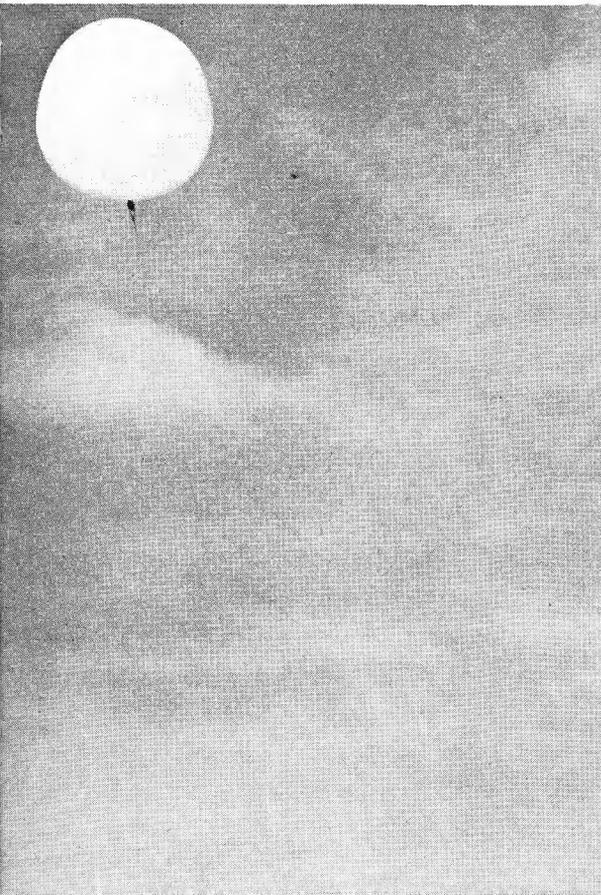
Jerry Lawrence (right) of WOR, New York, Wax Museum fame explains the 1912 spring-driven Victor Recording Machine.



▲ WAAC radio-television students listen in on a one-tube receiving set they built.



FRONT



Radiomarine Corp. of America demonstrates their radio-telephone set recently effective in South Atlantic rescue.

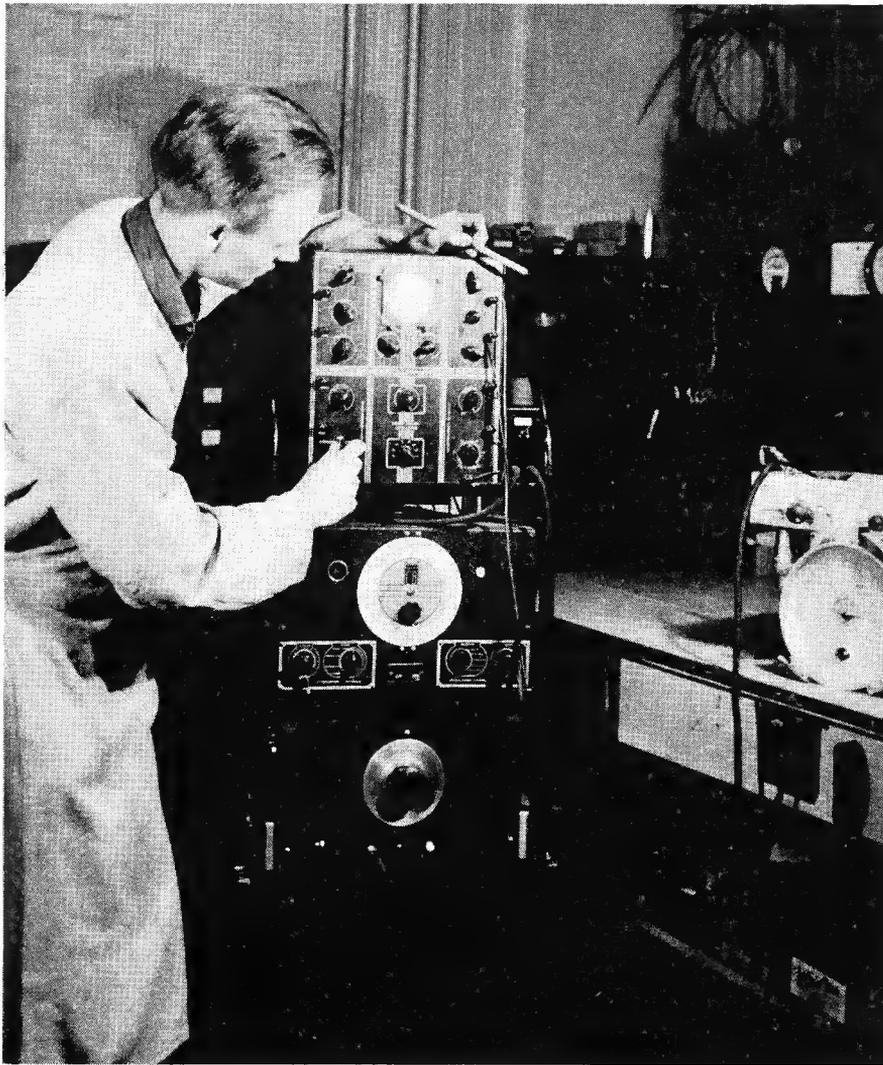


▲ Here are some WANCS—Women's Army-Navy Communications Service. Women employees of Philco Corp.'s Chicago division being sworn in.

← "Gibson Girl" new rescue aid. Balloon holds aerial aloft and provides automatic SOS transmission over 100,000 sq. miles. Developed by Bendix Aviation in collaboration with the Signal Corps.

Hildegarde, popular supper-club warbler and Decca artist, is scheduled to replace vacationing Red Skelton on NBC.





RADIO *Retailing* TODAY

Including Radio and Television Retailing

JUNE, 1943

In Two Parts—Part Two

by **WILLIAM E. MOULIC**
Service Editor Radio Retailing Today

Servicing with the Cathode-Ray Oscilloscope

How to save time and money with your test equipment. Applications to servicing industrial apparatus

• With new test equipment hard to get, it is absolutely necessary for servicemen to use everything they have in as many different capacities as possible.

The oscilloscope has been looked upon by most servicemen as something to be dusted off and used when some tough alignment job came along and then returned to the dark corner until a similar job shows up. Very few have taken full advantage of this useful and versatile piece of equipment. Its use in hum tracing, audio amplifier servicing, intermittent hunting, voltage measuring, frequency comparisons, etc., make the 'scope one

of your most useful servicing tools.

As a memory refresher, let's review briefly the function of the controls on the typical oscilloscope.

TURN THIS PAGE AND LOOK INSIDE

**For Your Complete Chart of
Oscilloscope Applications, Uses and
Characteristic Patterns, in Color.**

The intensity control (also called the brightness control) regulates the brilliance of the trace on the screen by controlling the grid bias on the cathode-ray tube. For long tube life, the intensity should always be as low as possible. Use a hood on the end of the tube for better visibility.

Cathode-Ray Controls

The focus control regulates the thickness of the trace on the screen by controlling the voltage applied to the first anode of the tube. For accurate analysis of patterns on the screen keep the focus as sharp as possible.

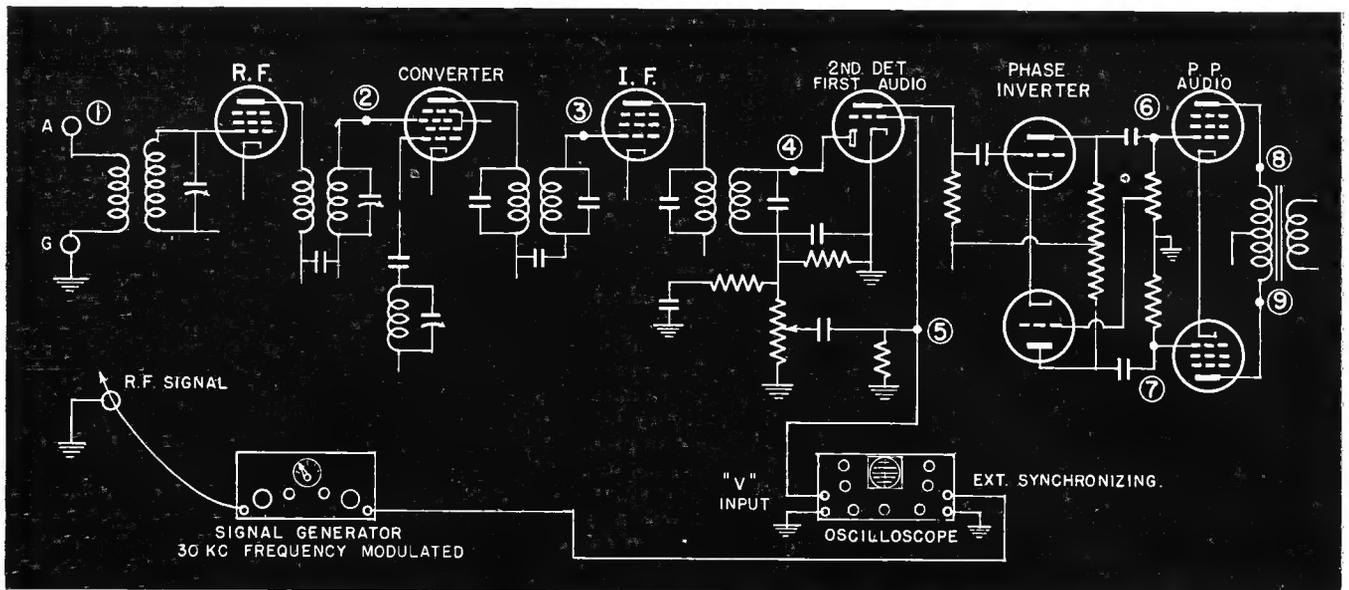


Fig. 1—To use the oscilloscope in hunting set troubles, connect "V" input terminals from first audio grid to ground and apply RF signal to points numbered from 1 to 4. Audio tests made in similar manner but with scope connected across speaker voice coil.

The two centering controls adjust the position of the pattern vertically and horizontally by controlling DC voltages on the deflection plates of the tube. The centering controls are usually on the front panel, but in many 'scopes they are screwdriver adjustments through the side or back of the 'scope case.

Horizontal Control

The "H" gain control regulates the input voltage to the "horizontal" amplifier and consequently the width of the pattern across the screen. Normally this control is adjusted to give a pattern which extends about three-fourths the way across the face of the tube.

The "V" gain control regulates the input signal voltage to the "vertical" amplifier and thus controls the height of the pattern on the screen. Since the voltage to be observed is normally connected to the "V" input, this control is adjusted to give the desired pattern size vertically.

Saw-tooth Controls

There are generally three controls associated with the horizontal "saw-tooth" oscillator. The "coarse frequency adjustment" or range control is a rotary switch with several positions and its function is to switch different values of capacity into the saw-tooth oscillator circuit to vary its range of oscillation. The range of oscillation is generally from about 40 cycles to about 15,000 cycles. A "fine" frequency adjustment is also provided to set the saw-tooth frequency to some exact value. It is a variable resistor in the oscillation circuit. These two controls should be adjusted to show the simplest pattern. More specific data will be given later in this article.

Servicing Sets

The third control on the saw-tooth oscillation is the "locking" or synchronizing control. This is the control used to make the pattern on the screen "stand still." Its function in the circuit is that of introducing some of the signal voltage, which has been applied to the "V" amplifier, into the grid circuit of the saw-tooth oscillator tube for the purpose of timing the oscillations. If the oscillator has been adjusted to approximately the same (or multiple) of the frequency of the voltage wave to be observed, the syn-

chronizing control can be advanced to "lock" the oscillator to the applied test voltage. The pattern will then remain stationary. Never advance the locking control further than just enough to "hold" the pattern.

One of the most useful functions of the oscilloscope is that of serving as an indicator for signal tracing. Briefly, the visual method consists of analyzing the wave shape and response of the signal passed by the set by means of the cathode-ray tube and a signal generator. Misalignment conditions, low or no stage gain, distortion, noise, and intermittent conditions show up on the screen. Once the patterns of characteristic troubles become familiar, it will be fairly simple to run down faults in short order.

Test Procedure

The general set-up is shown in Fig. 1. A frequency modulated test oscillator is employed as the source of the signal and is connected to the receiver under observation at points indicated in succession by numbers. The frequency modulated oscillator, if you do not have one, can be constructed from junk box parts. It need not be accurately calibrated as your regular adjustment frequencies. The test oscillator can be either mechanically or electronically modulated. There should not be any amplitude modulation of the signal. The vertical amplifier input of the 'scope is connected to the grid circuit of the first audio tube (ground side of the 'scope is connected to chassis), for all checks on the performance of the RF-IF end of the set.

With the equipment and set warmed up, connect the output of the signal generator to the antenna terminal of

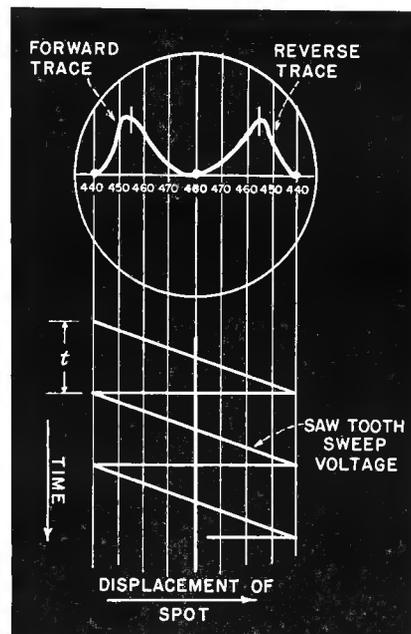


Fig. 2—The double image system of alignment requires the frequency of saw-tooth sweep voltage to be twice that of frequency of modulation.

the set. Tune the receiver to about the middle of the band and adjust the frequency of the oscillator until a pattern appears on the center of the scope screen. The sweep circuits of the oscilloscope should be adjusted to twice the frequency of the modulation of the oscillator. Thus if the test oscillator is being frequency modulated at the rate of 60 cycles per second, the saw-tooth oscillator should be adjusted to 120 cycles per second. This adjustment will produce a "double image" trace on the screen, one trace of which represents the response of the receiver for the change in frequency from minimum to maximum while the other trace is the decrease in frequency from maximum to minimum. The width of the response pattern is determined by the number of kilocycles that the oscillator is swept

through each cycle. This should be about 20 to 30 kc. This action is shown in Fig. 2.

Analyzing the Curves

The purpose of the tests with the oscilloscope is to obtain a visual indication of what is wrong with the set from antenna to first audio. A series of scope pictures are shown in Fig. 3 as taken on an actual job. The upper left graph shows the response for the set with a normal input signal. Its low amplitude and broad response indicate poor gain and misalignment. This first graph may be the result of weak tubes, and improper operating potentials as well as improper alignment. In this particular case, a weak tube in the RF end and off-tune IF transformers was the cause.

As a check on the misalignment idea, the input signal level was increased to about four times normal and the graph at the upper right of Fig. 3 resulted. Since it is well known that the changing AVC voltage in a receiver alters the alignment of the tuned circuits through the additional capacity produced in shunt with the grid circuit (Miller effect), this action was prevented by connecting a 3-volt battery from the AVC bus to the chassis for this test. The obvious double image of the second pattern proves the misalignment theory.

Correcting the Trouble

The correction of the misalignment is simple since all that must be done is connect the signal generator to point 2 on diagram of Fig. 1 and with the proper intermediate frequency and approximately a 20 kc. sweep, adjust the IF transformers until the two images overlap and the desired band-pass characteristic is obtained. Keep the peaks of the curves sharp for portables, auto radios and similar sets requiring maximum sensitivity. If the receiver is a large multi-tube job, the IF's probably require a "flat top" curve for higher fidelity. In old sets this can be produced by slightly detuning the IF's so that double traces on the screen overlap just enough to give the desired curve width at the top.

Supplying a Signal

Connect the signal generator back to point 1 and adjust the RF trimmers at the 1600 kc. end of the dial. The oscilloscope gives an overall picture of the set response and this is shown in the lower left graph of Fig. 3.

The lower right graph was made with the normal AVC system functioning. A high value of signal voltage input shows the detuning action of the AVC voltage. Some detuning can be tolerated at high input signals so, in general, the set should be aligned for a weak signal since all sensitivity is required at these input values.



Fig. 3—Oscilloscope pictures showing response of typical set as various adjustments were made. See text for details of each pattern.

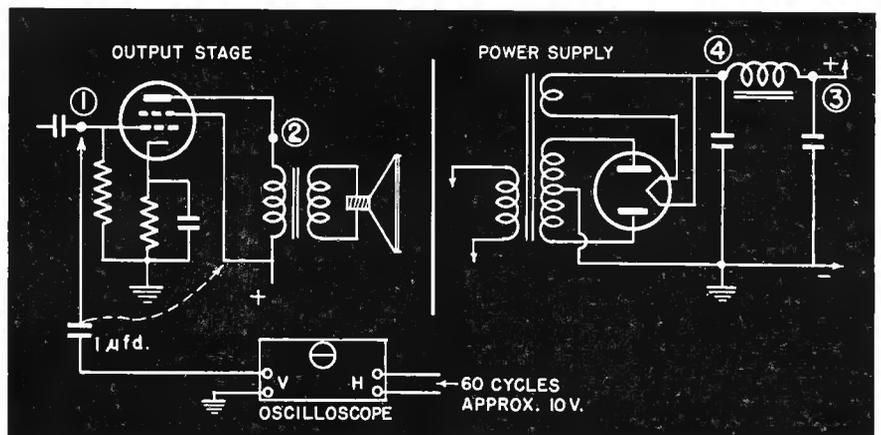


Fig. 4—Tests for hum in power supply and audio circuits are quickly made with the oscilloscope. A 60-cycle AC voltage is used as the horizontal sweep.

To localize the trouble in one stage of the receiver, an audio signal should be applied at point 8 or 9 (on Fig. 1) while the scope is connected across the speaker voice coil. If the signal comes through from this point it can be moved back to point 6 or 7. The audio signal is applied at other points back to the diode load resistor until this end of the receiver is checked as ok.

To hunt down trouble in the RF end, apply an audio modulated IF signal to point 4, moving the signal back toward the antenna until the source of trouble is found. The efficiency of by-pass condensers can be easily

proper filtering will cause a double loop pattern on the 'scope if 60-cycle sweep is used. If the hum is due to a leaky cathode, induction from power transformer into audio circuits, the pattern will consist of a single circle or ellipse. The vertical input terminals to the oscilloscope should be connected to various points in the audio and power supply circuits as shown in Fig. 4.

Tracing Hum Voltages

Hum in the grid circuit of a stage will usually indicate that it originated in a previous stage except for the cases where a fixed bias might be ob-

cathode ray tube to radio servicing, electronic equipment and other industrial applications. Servicemen will find familiar patterns covering the radio service field, for example, 1, 9, 10, 17, 18, 33, 35.

Industrial Applications

Most important use servicemen will find for this chart is its application to future industrial and special service problems. New radio and industrial electronic apparatus is being designed to depend more and more upon the wave shape of the current and

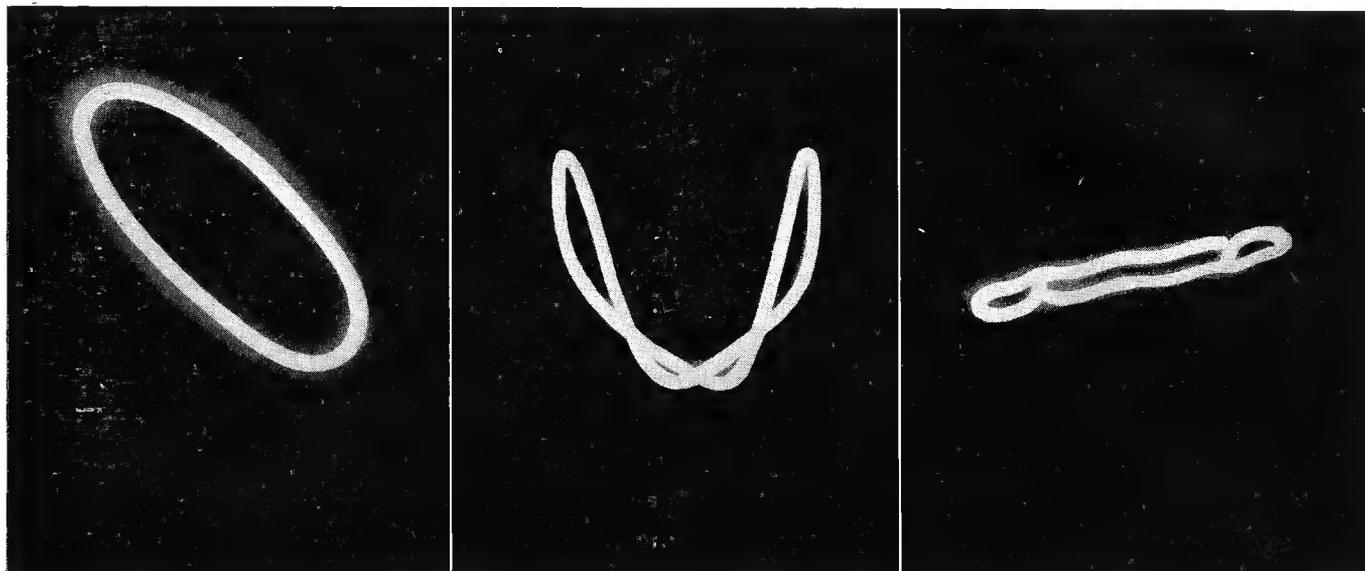


Fig. 5—Hum pattern on left is due to 60-cycle leakage from heater to cathode. Other two patterns show 120-cycle power supply ripple. Pattern at right is about normal for hum in plate circuit of last audio tube.

checked by applying the signal to the lead they are supposed to by-pass. If the capacitors are working properly, the signal output on the scope will be very small or zero. Be sure to use a blocking condenser in the signal generator lead to prevent damage to the attenuator from DC voltages in the set.

Use in Audio and Power Supply Circuits

Another very useful function of the oscilloscope is that of tracing annoying hum voltages through audio and power supply circuits. The method employed is shown in Fig. 4. It consists of applying a 60-cycle sweep voltage to the horizontal amplifier in place of the usual saw-tooth linear sweep. The vertical input terminals are connected to grid circuits, plate circuits and the power supply wiring while observing the pattern on the 'scope. The use of the 60-cycle sweep on the 'scope permits one to estimate the source of the hum.

If the set has a full-wave power supply, hum originating due to im-

tained from the power supply, or an input transformer was used and the hum was induced from power supply.

Typical patterns of 'scope tests for hum are shown in Fig. 5. The pattern on the left is a 60-cycle hum resulting from a leaky cathode, in this particular case the faulty tube was in the IF stage. The center pattern is a case of 120-cycle hum resulting from poor filtering. Considerable phase shift is shown by the non-symmetry about a horizontal axis, this indicating that the hum was probably introduced several stages before the one to which the 'scope was attached. The right hand pattern is a sample of 120-cycle hum of about normal magnitude at the plate circuit of the audio amplifier.

Patterns to Remember

Intermittent conditions will show up as unsteady traces of relatively short duration. When tracing hum, be sure that the leads to the 'scope are not picking up the observed signal.

The 4-page chart backing this article is a representative group of oscillograms covering applications of the

voltage being used. Correct operation of all this apparatus will depend upon the control of the wave shapes. The oscilloscope is the only fast means of determining the wave shape and it is the only equipment that will permit the serviceman to see the effect of certain adjustments upon the wave shape.

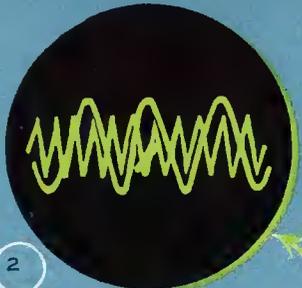
An Instrument with a Future

Typical of the industrial applications of the oscilloscope is that of determining the "on" current time in automatic welders. This time is usually only a fraction of a cycle. Studies of engine pressures, vibration frequencies, and countless other jobs call for the oscilloscope.

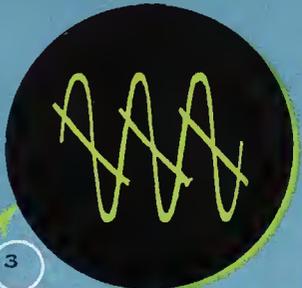
Study of this chart will reveal the allied equipment and typical wave shapes necessary to adjust the performance of many common home and industrial devices. Much of the future servicing technique will center about the oscilloscope. Learn to use it well.



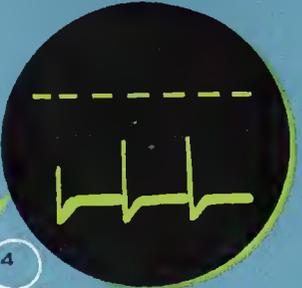
1
USED AS VACUUM-TUBE
VOLTMETER. READS PEAK
VOLTS AT ANY FREQUENCY.



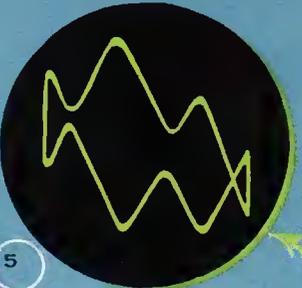
2
DOUBLE TRACE USING ELEC-
TRONIC SWITCH. SINE-WAVE
FREQUENCY COMPARISONS.



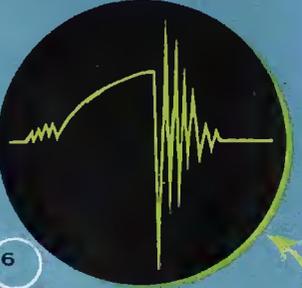
3
DOUBLE TRACE USING ELEC-
TRONIC SWITCH. SINE & SAW-
TOOTH WAVES COMPARED.



4
DOUBLE TRACE USING ELEC-
TRONIC SWITCH. PULSE
FROM NERVE STIMULATOR.



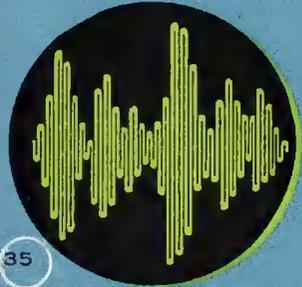
5
WAVE STUDIES WITH
TEST WAVE APPLIED TO
AN ELLIPTICAL TIME BASE.



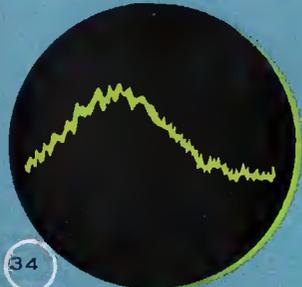
6
IGNITION STUDIES. SEC-
ONDARY POTENTIAL
WAVE ACROSS SPARK PLUG.



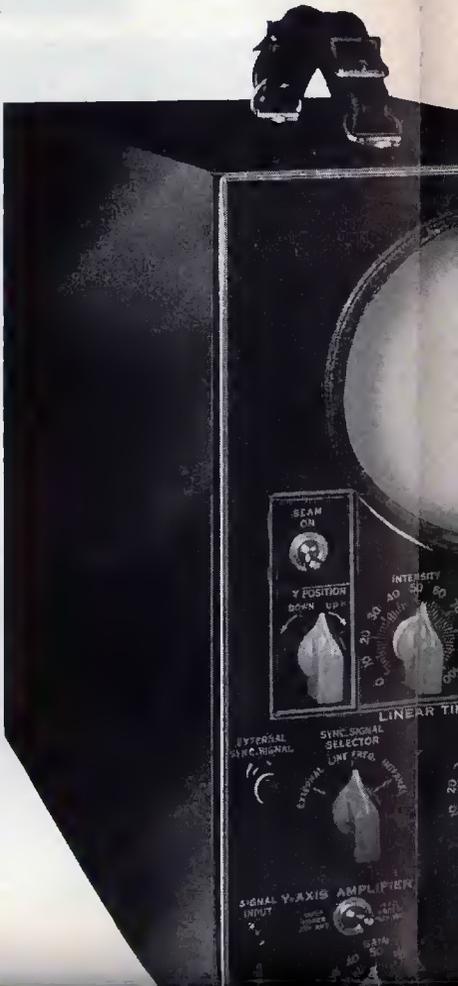
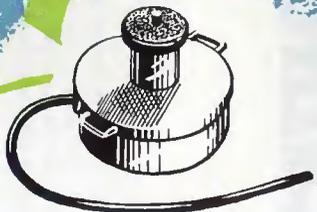
36
VIBRATION STUDY IN
MACHINERY. PRELIMINARY
TO DYNAMIC BALANCING.

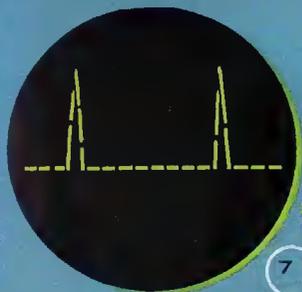


35
MUSICAL TONE, WITH VIBRA-
TION PICK-UP APPLIED TO
MUSICAL INSTRUMENT.



34
GEOPHYSICAL EXPLORATION.
DELINEATION OF EARTH PRES-
SURE WAVE PROPAGATION.





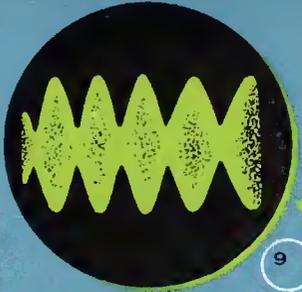
7

BALLISTIC STUDIES. BEAM MODULATION OR "Z" AXIS GIVES TIME DOTS ON LINES.



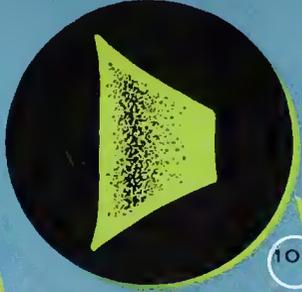
8

RADIOPHONE TESTS SHOWING R. F. LEAKAGE INTO AUDIO AMPLIFIER SYSTEM.



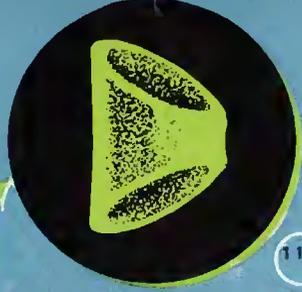
9

MODULATED R.F. SIGNAL, USING LINEAR TIME BASE IN THE OSCILLOGRAPH.



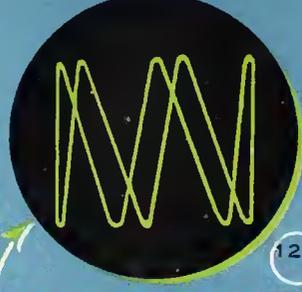
10

MODULATED R.F. SIGNAL, USING AUDIO MODULATING TONE AS THE TIME BASE.



11

SIMILAR TO 10 (at left) BUT WITH A PHASE SHIFT SHOWING IN AUDIO SYSTEM.



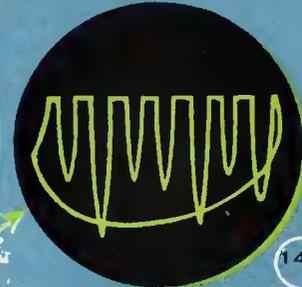
12

LISSAJOU FIGURE, TWO SINE WAVES APPLIED TO DEFLECTION PLATES WITH 5:1 RATIO.



13

AN AUDIO-FREQUENCY TONE WITH STRONG 15th HARMONIC OR OVERTONE SUPERPOSED.



14

OUTPUT FROM CLIPPER AMPLIFIER IN A TYPE OF WAVE SHAPING CIRCUIT.



15

CIRCULAR OSCILLOGRAM. APPLIED VOLTAGE MOVES RADIALLY FROM A BASE CIRCLE.



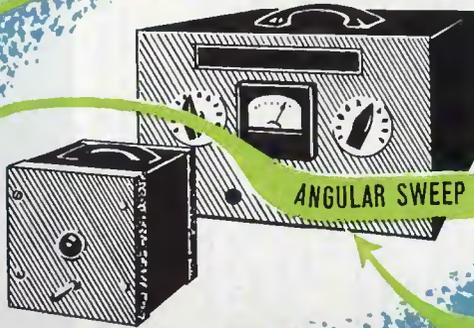
SPECIAL SWEEP



PRECISION FORK



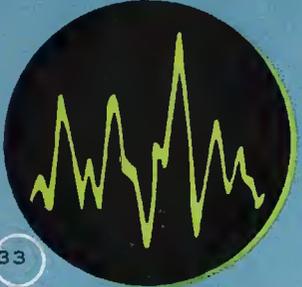
AUDIO OSCILLATOR



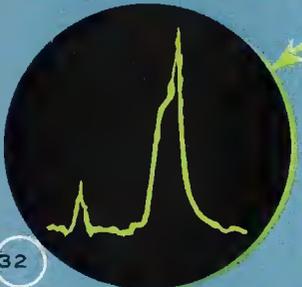
ANGULAR SWEEP



PHOTOCELLS



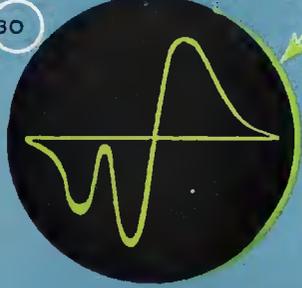
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MUSICAL TONE PICTURE. STUDY OF MUSIC AND SOUND CHARACTERISTICS AND PITCH.



32
FIRING STRESSES IN GUN BARRELS CAN BE DELINEATED USING STRAIN-GAGES.



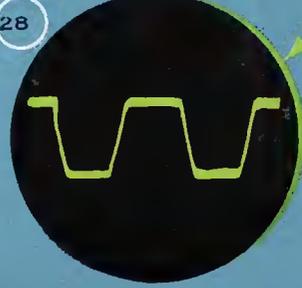
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CYLINDER PRESSURE DIAGRAM IN DIESEL. BASE LINE REPRESENTS 120° SHAFT ROTATION. GAS-ENGINE INDICATOR DIAGRAM. SHOWS RATE-OF-CHANGE IN CYLINDER PRESSURE.



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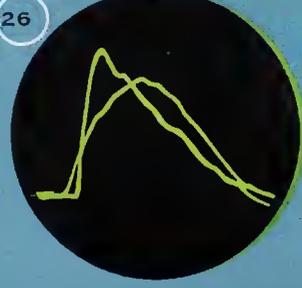
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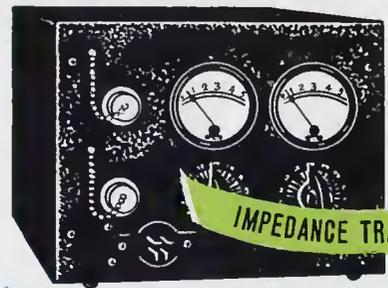
MICROPHONE



FILTER



PRESSURE PICK-UPS



IMPEDANCE TRANSFORMER

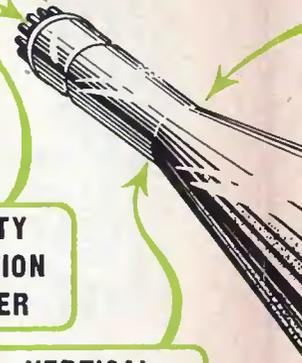


SQUARE WAVE OSCILLATOR

POWER UNIT and BEAM CONTROLS

INTENSITY MODULATION AMPLIFIER

VERTICAL DEFLECTION AMPLIFIER



THE CATHODE RAY

in the physical sciences, education, and industry, the oscilloscope, as shown in center, with some frequency converter accessories, has become the most important measuring instrument ever devised.

COMPILED BY R. R. BATCHER, CONSULTANT

HORIZONTAL DEFLECTION AMPLIFIER

TIME BASE GENERATOR

FREQUENCY-MODULATED OSCILLATOR

MAGNETIC SEARCH COILS TO VERTICAL AMPLIFIER

RECORDING CAMERA & TIME BASE

MAGNETIC COMPARATOR

OSCILLOGRAM OF THE STRAY MAGNETIC FIELD RADIATED FROM AN ALTERNATOR.

ADJUSTING I-F TRANSFORMERS. SHOWS MISALIGNMENT AS TO FREQUENCY SETTING.

ADJUSTING I-F TRANSFORMERS, BETTER, BUT RESONANCE CURVE UN-SYMMETRICAL. MAGNETIC HYSTERESIS OR B-H CURVES OF A TRANSFORMER LAMINATION SAMPLE.

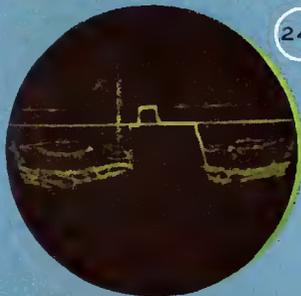
TELEVISION SYNCHRONIZATION SIGNAL FOR HORIZONTAL SCANNING CONTROL.

A TELEVISION SIGNAL DELINEATED, DUMONT SYSTEM SYNCHRONIZING SIGNAL.

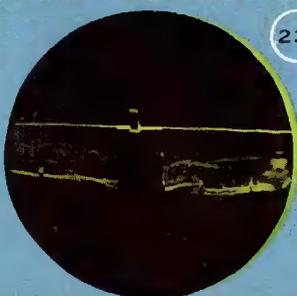
IONOSPHERE ECHO. TIMING OF REFLECTED RADIO SIGNAL USING CIRCULAR TIME BASE.

ELECTROCARDIOGRAM. DELINEATES ELECTRICAL SURGE GENERATED BY HEART BEAT.

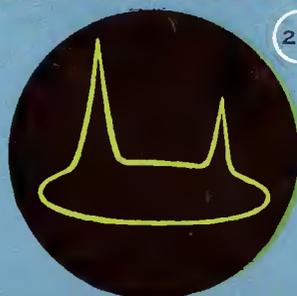
MAGNETIC COMPARISON. IDENTICAL CHARACTERISTICS GIVES STRAIGHT HORIZONTAL LINE.



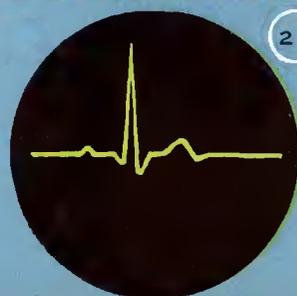
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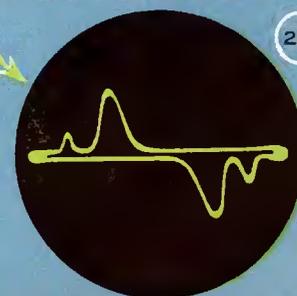
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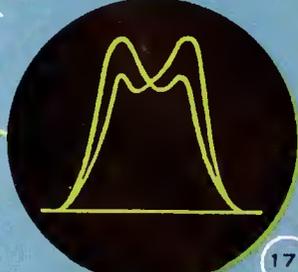
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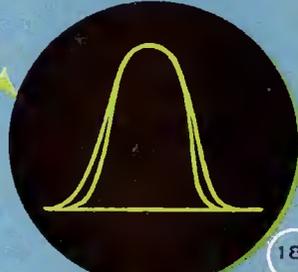
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RAY OSCILLOGRAPH

education and industry. The oscillograph, the frequently associated apparatus and the most versatile measuring instrument devised by science.

CONSULTING ENGINEER FOR "RADIO RETAILING TODAY"

Self Selection In Disc Retailing

A Colorful and Efficient Plan for Record Dealers Who Face Wartime Shortages in Sales Personnel

• Self service first became general practice at the close of World War I, when a dearth of experienced clerks existed, due to the forerunning years of concentration on war activities. This was also the period during which the popularity of phonograph records first became an increased certainty. And, when the hilarious war-free public had had its fill of "Avalon," "Whispering," "Margie," and other then current tin-pan-alley tunes of the period, they began a marked investigation of the classics. This was a factor that made self service in record departments less successful, due to the lack of the public's education to the classical records that were already in the stocks.

The same problem, somewhat in reverse, is apparent, now that we are beginning to consider ourselves well into the war period. Help of any kind, experienced or not, in sales departments of all branches of retailing is scarce, as more and more individuals become immersed in the mechanism of a nation at war.

Greater Success Today

The adaptation of self service to record retailing today, however, will be found an easier and more successful enterprise. Popularity of records reaching the new high that it has, plus continuous education and expansion of the public's tastes in the classical, removes the hindrance to increased sales which existed during the last period of self service trials.

Self service in record departments is not new, having received spot trials throughout the country from time to time. However, the recent success of this sales method currently employed by Bloomingdale Bros.' New York department store has proved an

outstanding one and should be of interest to dealers everywhere, as its methods can be applied to almost any setup.

Floor Plan Important

About six months ago O. W. Ray, vice president of Times-Appliance Co., Inc., New York distributors, suggested a complete self service record department to Bloomingdale's, and upon its acceptance found an entire meeting of minds with T. Stanton Fremont, buyer of records for Bloomingdale's, and long an advocator of the installation of this sales technique. A floor plan was quickly forthcoming and Mr. Stanton and his associates turned out the very complete, up-to-the-minute department, pictured on these pages.

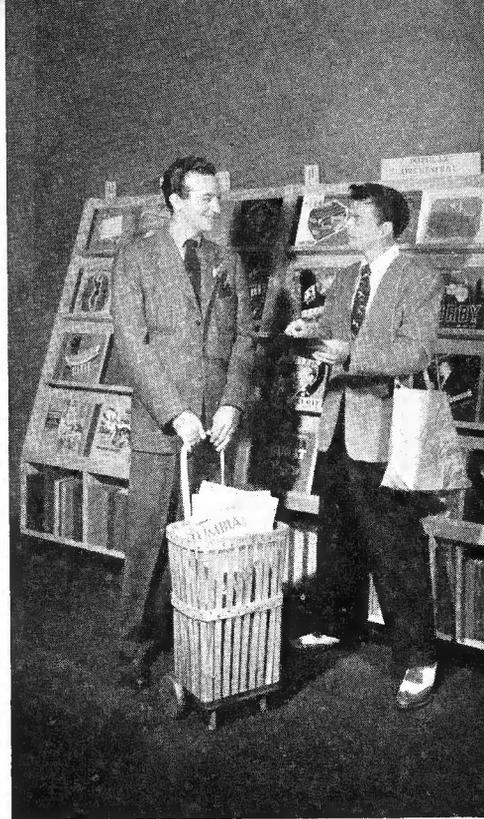
Bloomingdale's Setup

The approximately square floor space was divided into one oblong room, with three smaller rooms opening off from the long room. The customer entering at one end of the oblong room is flanked to the left by wall racks displaying the popular discs, each rack clearly labeled. In the center of this section are two double-sided racks, which hold the current favorites of the section. To the customer's right in this room are eight listening booths built against the wall. Acoustically adjusted by overhanging, curved top, each booth is comprised of shelf built out from the wall, accommodating an electrically controlled record player, individual ashtray, and racks for records against the wall. These booths do not have doors, but are merely separated by stall-like walls about two feet in depth. Interestingly enough, despite their proximity, records played in adjoining booths, simultaneously, do not

distract the listener from his own selection.

Classical Divisions

Three doors in this righthand wall, interspersed between the listening stalls, lead into three separate rooms. The main of these is the room allotted to symphonies, concertos and orchestral suites. It has four lighted, air-conditioned listening booths with glass doors, one in each corner of the room. Wall and center floor racks display the albums. The second and third rooms have two of the same type listening booths and the same wall and floor rack display of albums. Room two contains opera, ballet, classical piano and sonata recordings. The third room houses the division of vocal recordings, both popular and classical,



and popular piano and orchestral arrangements.

Album Covers Have Sales Potential

The color scheme for walls, furniture, and floor covering of the entire department is concentrated in plain, cool colors, which not only allows the colorful album covers to supply the decorative motif, but permits the full sales potential of these album covers to show up to ultimate advantage. Clear, directional signs inform the customer, and a minimum of clerks are on hand to replace stock and accept the sales. Simplicity and orderliness is the keynote.

Sales Increased 300 Per Cent

It is interesting to note that in 1800 square feet this department is



- **The Big Three to remember in planning for self service record department:**

COMPACTNESS—Simplify division of selections. Plan for stock to be kept directly in conjunction with display.

ORDERLINESS—Directly after a sale has been made, make it a practice to immediately replace and rearrange stock. This is important, from a display standpoint, as well, because of album-cover sales value.

VERSATILITY — By closely following the foregoing two rules, a dealer will find he can include more variety in types of music. Inventory is easier and turnover of different type selections can be more closely, accurately and quickly followed.

so compactly arranged as to give effective display to from 480 to 504 individual albums and 320 disc selections. These figures do not include the duplicate stock stored in this space, nor the stock of 24,000 rarely-called-for discs stored across the end wall of the oblong main popular section. In this department, which even includes children's records such as: Winnie the

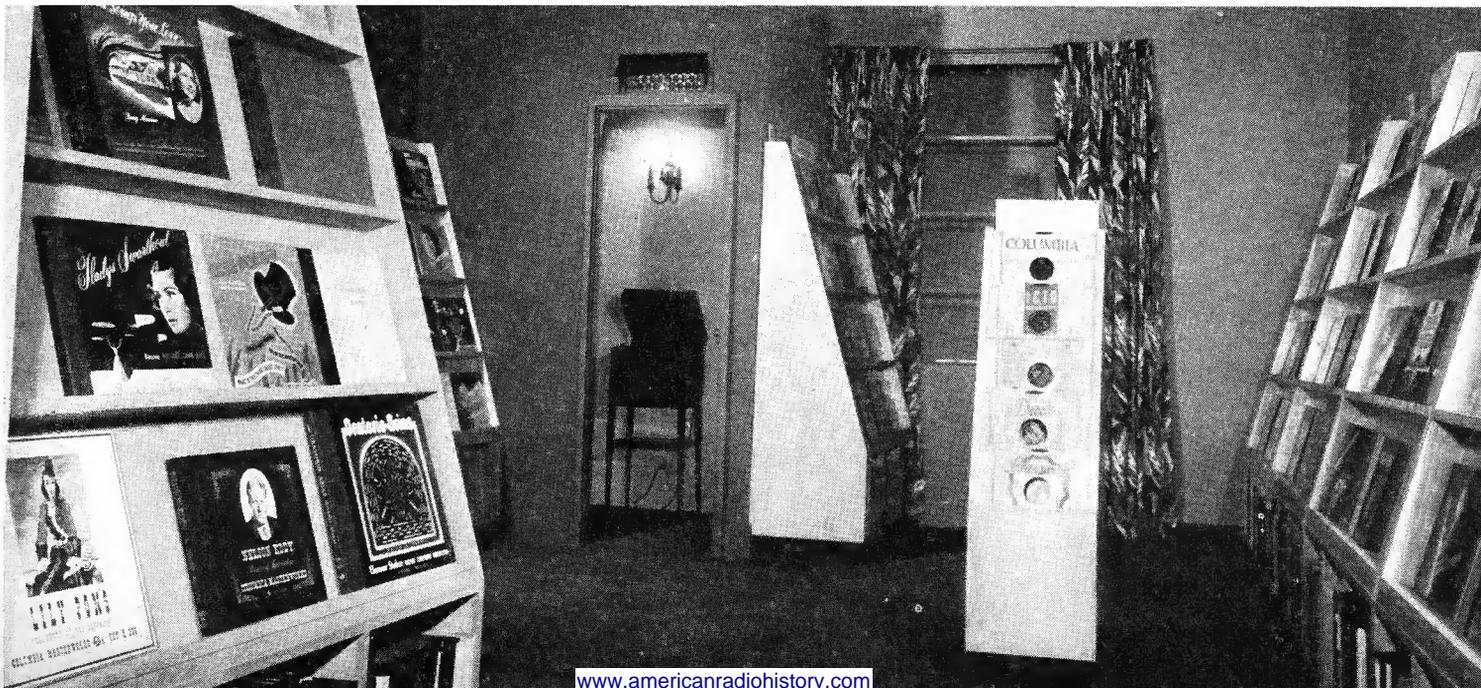
Pooh Songs (Victor), Ringling Circus Band Selections (Columbia), and Tarzan and the Little Black Boy Stories (Decca), compactness is an aid to versatility. While slightly larger in floor space than the average dealer's space, the principles behind it can be applied to any scale.

The large distributors' currently report that self service has in most cases doubled sales. Specifically, in the Bloomingdale experiment, sales increased 300 per cent.

Allied Lines

Incidentally, your reporter uncovered two new items that may be of interest to record dealers as allied lines. One is called the Redi-Record Log, a leather folder of writing-case size, which holds index-card listings for approximately 800 records. Retailing for around \$1.60, it is manufactured by Redi-Record Products, 253 Fifth Ave., New York. Another item which may be carried in conjunction with children's records is a large sturdy cardboard cut-out of various Walt Disney characters. Children can punch out the already outlined, cut out figures, color and paste them on supplied cardboard placque. They serve as toys or decorative nursery placques and retail for about 35 cents. Called Walt Disney Character Plaks, they are manufactured by Youngstown Pressed Steel Co., Warren, Ohio.

Top, left to right, Harry James and Frank Sinatra make a few purchases on opening day. Center, Entrance room to Bloomingdale's self service record department. This room is devoted to popular discs and albums. Note storage space for stock in lower portion of display racks, and individual listening stalls at left. Below, This is Room Three, mentioned herein, in which are kept albums of popular and classical vocal, piano and orchestral recordings.



Banking To Music

New Field Open To Musical Installations Both Now and In The Future

• When the second largest savings bank in the world provides music for its customers and employees, that's news! And that's just what has happened in New York, with the Emigrant Industrial Savings Bank, using recorded music by Muzak piped into its two places of business, 51 Chambers St. and 5 E. 42nd St.

And the results? Not only did the bank workers vote the piped-in music a more than welcome innovation, but the customers and depositors are equally pleased, and an official of the bank told a representative of **RADIO RETAILING TODAY** that speakers will

above, would be quality music broadcasts by FM stations, freedom from static and the absence of commercial announcements. While tastes differ in music, and differ drastically, well modulated classical music is objectionable to no one. As a matter of fact the officials at the Emigrant Bank find it soothing.

Hospitable Atmosphere

They find it provides a hospitable atmosphere for patrons. "Some people enter a bank with a certain degree of trepidation," said an official,

of the bank. The Chambers St. branch has extremely high ceilings, and a lot of stone-work and pillars. It took a little experimenting here before proper acoustics could be achieved.

No Jive

For obvious reasons, no vocal selections are used, but the classical works of famous composers are used exclusively. In a balloting of employees, some did make rather devious references to virtues of ballads sung by some of our more or less famous crooners of blues, swing and jive, but



Ewing Galloway

be installed on the third floor at 51 Chambers St., for the employees and patrons of the real estate and mortgage department.

FM Fits Picture

The type of music employed may suggest to the radio retailer an entirely new use for FM sets, provided, of course, he has any to sell right now. Even if he hasn't, he can figure on the sales possibilities of such receivers in banks, "personal" loan companies, bond and mortgage and similar institutions, when peacetime manufacture is resumed.

The salient features of FM in applications such as the ones mentioned

"and we find that music helps put them at ease. At the same time it entertains our employees, and particularly does it help those of our workers who are obliged to work late at night."

Past Experimental Stage

The official stated that the "piped-in" music had definitely passed the experimental stage, and was to be permanently adopted. Right now the music is on from 9 to 10 a.m., then it goes off again until 11:30 a.m. The music is turned on again at 2 p.m., and is used from then on, continuously, until quitting time.

Two units are used in each branch

the bank officials just can't allow themselves to get that far in the groove, so they stick to Beethoven, Strauss, Sibelius, Tschaiikowsky and others of the same class.

Another midtown bank in New York uses Muzak music in its personal loan department. Here, doubtless, the soothing effects of music, make borrowing and paying problems seem easier. This institution does not, however, use the piped-in music on its main banking floor.

So with these innovations being adopted by such traditionally conservative institutions as banks, we may visualize a new, lucrative outlet for FM, when and if banks generally adopt such a music policy.



*If it's lightning they want —
we have that, too*

WILCOX-GAY CORPORATION
CHARLOTTE, MICHIGAN
Pioneer Manufacturers of Electronic Equipment

Store Keeps Step

Dealer Stresses Display Style

A wartime example of the value of attractive and pleasant surroundings is seen in the showroom of Casa Gavila, 3531 Broadway, New York City. Here displays of radio, records, cameras and other items are segregated methodically for easy customer inspection. Comfortable record booths aid the customer in selecting records, of which Casa Gavila carries a large stock.

Timeliness

Great emphasis is laid on the importance of maintaining an attractive show window, displaying a wide variety of major and minor appliances. This window is changed frequently, and as there is considerable foot traffic past this shop, it is felt that much new business is developed through keeping timely and interesting window displays.

The Gavila Brothers, Frank, Manuel and Angelo started business as a partnership in 1933, on 145th St., near Broadway, and were known as Hudson Radio Store. They began with a moderate supply of radios, phonographs, parts, tubes and electric lamps. A feature of their business at that time was radio service, and this department soon became a most profitable one.

A few months after they had opened the store they took on a stock of elec-

tric refrigerators, washing machines and other electric household appliances. The business continued to grow, and in 1938, fountain pens and type writers were added to the stock.

Continued Gains

Constant expansion of business necessitated the removal to larger quarters, so in August, 1940, a corporation was formed, and the business to become known as Casa Gavila, was established at the present address.

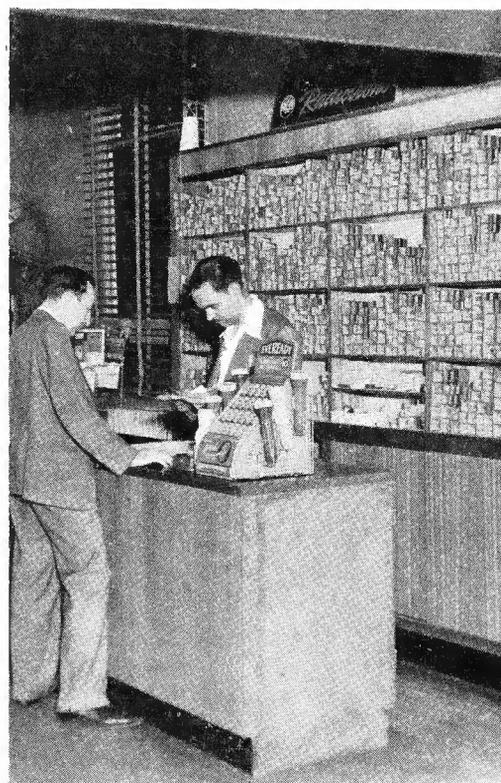
One of the first things Gavila Bros. did when they moved to their new location was to add a phonograph record department, carrying a complete line of English and Spanish popular and classical numbers, and they provided the most comfortable and attractive booths for the enjoyment of their patrons.

Adds Cameras

About a year after opening its new store, Casa Gavila added a modern camera and photographic department.

A wholesome spirit of optimism pervades Casa Gavila. There's no crying or squawking about "conditions." No guessing about what's going to "happen." Faith in American business and in American ability to successfully prosecute the war, are impressions one makes in talking to the Gavila Bros.

Worried? Well, they've recently enlarged their repair department, fitting



Below, Casa Gavila record department, showing Frank Gavila, center, behind counter. Note fluorescent lighting, artistic decorations and glimpse of record-playing booth at right. Upper right, starting next to the man writing out a sales slip, are Manuel and Frank Gavila, and below a part of the attractive interior.



it up with the most modern instruments, and they've issued a statement that "we are now working on a new deal, and may soon add still another line."

Down in Louisiana, a radio service man has adopted the motto of our fighting men in the Pacific: "The difficult we do quickly, the impossible takes just a little longer."

The slogan fits the methods of Casa Gavila, too, and here's a shop doing things today many of us consider impossible or impractical; and doing them quickly.



When the Guns Fall Silent

Inspired by the urgency of today's military needs, Belmont radio engineers are exploring new fields of possibilities . . . finding the answers to long-puzzling questions . . . putting a host of new, better ways into practice. The story of all these achievements must remain a secret until victory is won. But this much can be told. The radio developments

that now make our country stronger in war will, one day, bring a period of the greatest radio advancement this nation has ever known. And in this advancement, Belmont will play a leading part. *Keep your eyes on Belmont for great new things to come when the guns fall silent!* Belmont Radio Corporation, 5921 W. Dickens Ave., Chicago, Ill.



Belmont Radio

TELEVISION ★ ELECTRONICS

Radio Parts Supply News

Protests Government Buying Direct

At a recent meeting of the board of directors of the New Orleans Association of Commerce, a resolution protesting against "direct" purchasing by the government was adopted.

Stating that the method of distributing through a jobber or wholesaler developed to economically channel manufactured goods from the maker through to the ultimate user is a "practice in distribution which is the net result of many years of experience on the part of industry and has been adopted by almost all classes of manufacturers," the resolutions point out that the tremendous and rapid expansion which has taken place in government agencies, precludes the possibility of expecting them to be able to develop an organization of the same type and character as is now in operation by the jobber and wholesaler.

It is also pointed out that any policy on the part of the governmental agencies which fails to utilize fully the experience and knowledge of the various local distributing organizations and procurement agencies is not

for the best interests of our National welfare and "causes unnecessary loss of man hours through the needless duplication of effort. . . ."

Request Consistency

Stating that the appeal for the government agencies to use more completely the facilities of wholesalers and jobbers, is not intended to include instances involving engineering problems or contracts placed on an annual service of supply basis, the resolution declares that it is not equitable to expect jobbers or wholesalers to perform their services "only on occasions when the urgency of the case at hand actually demands the class of service which the jobbers or wholesalers are in a position to render, and on the other hand, by-pass them in instances when the same degree of urgency does not exist. . . ."

The resolution was forwarded to the purchasing agencies of the War Department, the Army, the Navy, the Maritime Commission, and other agencies, as well as to the U. S. Chamber of Commerce and various trade organizations.

Radio distributors in the area are

helping to circulate the resolution, and are enlisting the active support of jobbers in other areas where the direct-buying problem is acute.

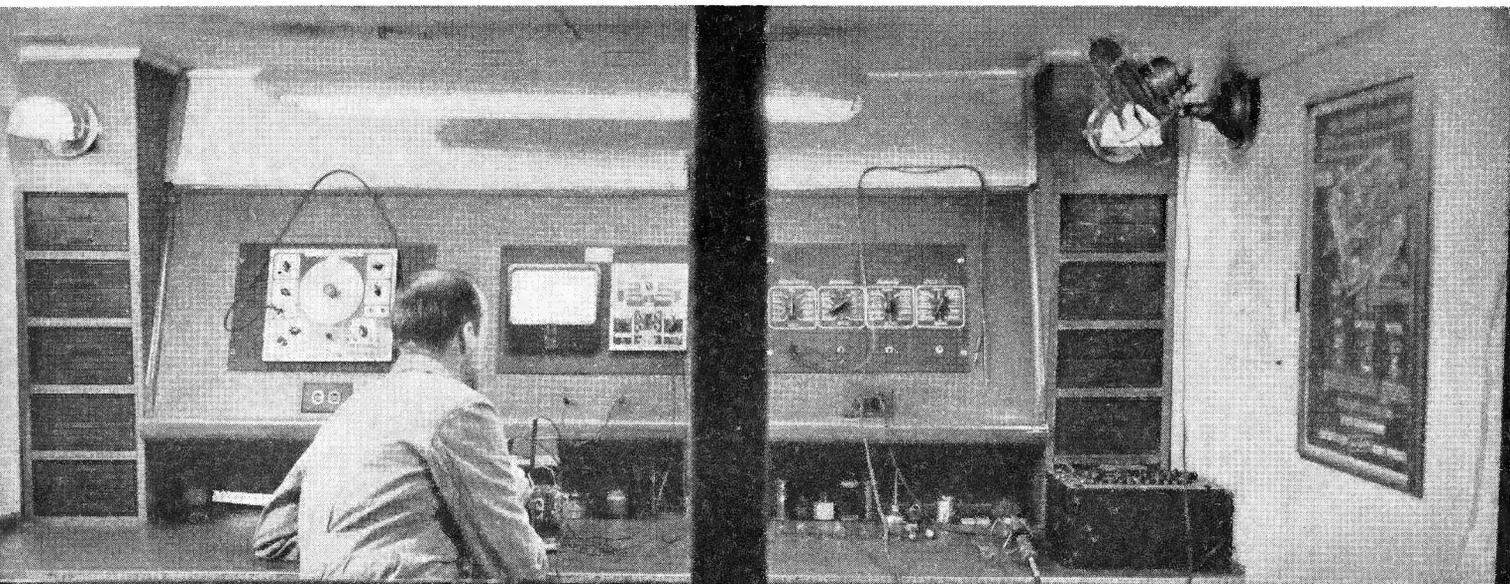
New Orders Affect Radio Parts

A bulletin issued by the National Electronic Distributors Association calls attention to two new government orders affecting radio supplies. Limitation Order L-293, is the order limiting with certain exceptions the manufacture of radio parts, to those listed by the American Standards Association, known technically as "American War Standards," but better known as "victory replacement parts." The order goes into effect on July 1, 1943.

M-293 is known as a "general scheduling order" and permits rescheduling of "critical common components," and controls the following radio and radar items: 1, Capacitors (certain types); 2, coaxial cable; 3, industrial type instruments; 4, combat measuring instruments; 5, plugs and connectors (only a certain fan type); 6, transformers (certain types); 7, test equipment; 8, tubes (radio and radar application only).

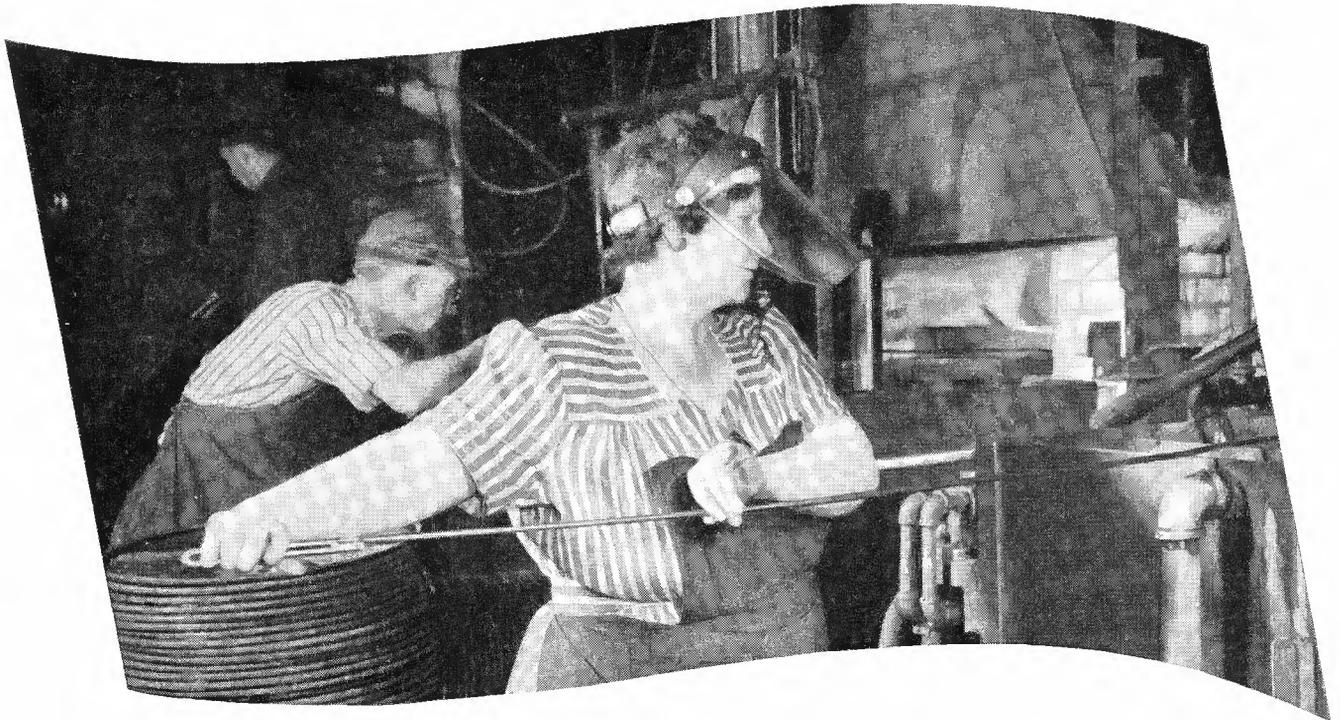
According to the bulletin, the average parts jobber is affected by No. 7 only. Every test equipment order must be written up on Form PD-556 and sent to Washington for approval. Copies of M-293 may be procured from local WPB Boards.

Styler-for-speed service benches like this one at Dixie Radio Supply Co., Columbia, S. C., can do an A1 job in keeping war radio going, if sufficient parts are made available.



Here you see Mom and Pop

BLASTING *the* **AXIS!**



MEET Mary and John Garland, husband and wife, who work side by side, at "heat-treat" furnaces in one of the war plants of Noblitt-Sparks. They're fashioning metal reels for communication cable—making things plenty hot for the Axis.

Mary and John have a son in *this* war. In the last war, Mary served as a Red Cross nurse in France. She was wounded about the face and knee when the Germans bombed a hospital near Brest. Now, she wears a silver kneecap and can't go to the fighting front again.

But back here on the production front, Mary and her husband are working hard to lick our enemies. And what they are doing is quite a lot.

Today there are hundreds of thousands of Marys and Johns in this great country of ours—all working with the same spirit—and for the same great purpose.

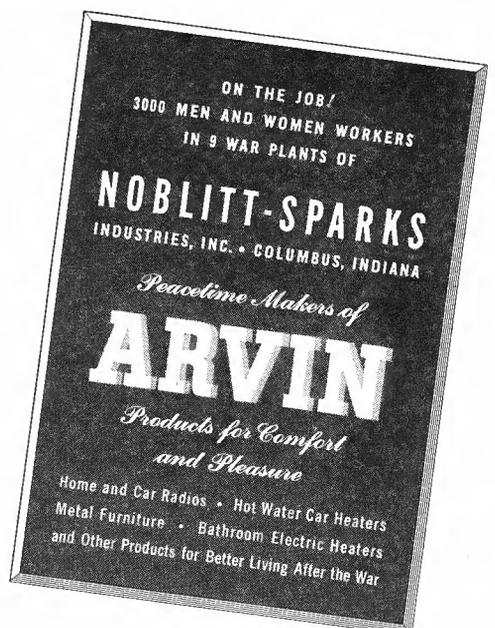
The workers of Noblitt-Sparks—3000 men and women in nine plants—are producing tre-

mendous quantities of weapons for war. So, until war's end, we can't be making the good old Arvin products for comfort and pleasure.

The metal and labor that formerly went in Arvin furniture—hot water car heaters and bathroom electric heaters—are now going into water and food supply-cans for our fighting men—blitz-cans for gasoline on the battle fronts—ammunition boxes—anti-tank mines, burster-wells, bombs—and many vital parts for combat cars, tanks and transport trucks.

The experience and skill that went into Arvin radios before the war are now going into fighting-radios for planes and trucks—radios built with great precision to enable our fighting men to talk back and forth and win battles in the air and on the ground.

After the war, Arvin products will be back again—all better, some new. Until then—the men and women of Noblitt-Sparks are working with supreme confidence and a whole heart.



HELP YOUR COUNTRY—HELP YOURSELF—BUY MORE WAR BONDS

ARVIN is still reaching millions—preparing the way for your future markets. The page reproduced above is appearing in the June 26 issue of Collier's Weekly and the July issue of Capper's Farmer. Other Arvin pages are appearing from month to month in other leading national magazines such as The Saturday Evening Post, Life, American, Cosmopolitan, American Home, Better Homes & Gardens, Country Gentleman and Successful Farming.

Tell It to the FBI!

As "Commencement Day" for Nazi Saboteurs in Berlin School Draws Near, J. Edgar Hoover Urges All to Be on Guard



H. Armstrong Roberts

• The Federal Bureau of Investigation's recent statement that "Increasingly in 1943, every American citizen—whether on the farm, in a small town, or in a metropolis—must consider himself an individual 'listening post' for the Bureau, should appeal strongly to radio men.

The FBI's statement that a new crop of rigorously trained Nazi saboteurs will soon be graduated from Berlin's crack school, operated for this purpose, and loosed upon the world, means that all citizens will have to be on the alert. "Some of these Nazi agents will try to enter the United States," said J. Edgar Hoover, director of the FBI. "We must therefore, be on guard."

Every radioman knows the part radio equipment plays for the spy or saboteur. The newspapers are full of stories of seizures by our government's zealous FBI men of contraband sending and receiving sets. Trained radio men in this country are in a strong position to aid the effort requested by Mr. Hoover's department.

Last year alone more than 218,000 reports concerning persons or situations thought to be dangerous to the national security reached FBI, and the latter agency cites numerous actual cases of how American citizens have aided the bureau in its gigantic task.

That persons engaged in special professions such as radio can be instrumental in aiding the FBI is seen in the case of "Heinrich," whom the FBI had sought to identify for some time. It was "Heinrich" who was furnishing Lily Stein, another spy, information concerning aircraft production.

This man was either in contact with an extremely intimate source of facts or else possessed a genius for collating particles of information into the one significant over-all fact, and FBI officials frankly admitted that "Heinrich" had them worried.

An observant Connecticut aircraft photographer, who knew nothing of the FBI's interest in "Heinrich," supplied the missing piece to the puzzle. Suspicious of an unusually large order for 250 aerial photographs, the photographer informed the FBI of this purchase, and gave the name of the buyer . . . Edmund C. Heine. The FBI lost no time in "cracking down" on the suspect, identifying Heine as the elusive and mysterious "Heinrich." The spy was sentenced to 18 years and fined \$5,000.

Had Shortwave Radio

Stressing the necessity for turning in an item even if you think someone else has done so, the FBI cites the case of Marot Albert Boet, a naturalized citizen of Italian birth. Boet had been writing long letters to radio specialists, newspapermen, government officials and various civic organizations, praising the Fascist order and attacking the American system of government.

Of him the FBI says: "His letters were provocative, even if not effective, for he was not a nut; and he might have slipped through the fingers of the FBI if everybody had left it up to 'the next man' to turn him in."

In the case of Boet, however, a number of citizens did not fail to tell the FBI, and the prolific letter writer was arrested for failing to register as

an agent of a foreign government. He was de-naturalized and interned as an enemy alien.

A highpowered shortwave radio receiver was found in his possession.

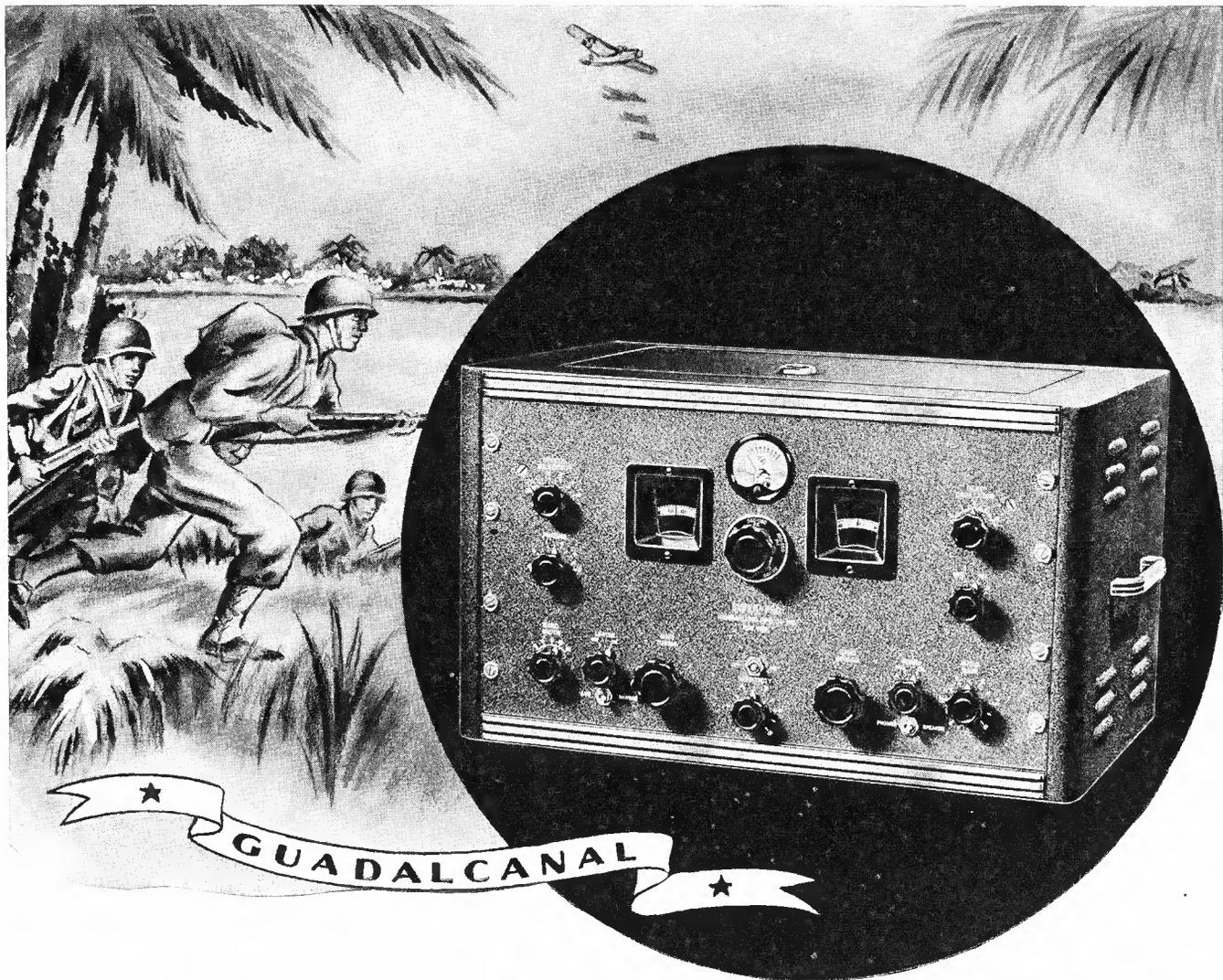
That radio men as well as all others may help is seen in the request by President Roosevelt that all patriotic organizations and citizens cooperate actively with the FBI, and the latter organization urges citizens bringing them information never to consider themselves to be "wasting the time of important men," in performing this service. FBI also pledges that whatever is disclosed will remain completely confidential between the individual and the bureau.

Storm Trooper Taken

The Office of War Information recently cited the case of a truck driver who reported to protection officers in a Kaiser shipyard on the Pacific Coast that he had seen what he described as a suspicious character lurking about a warehouse. A search revealed no one of that description in the vicinity. That night, however, a guard, familiar with the report which had come in earlier in the day, surprised a man kneeling in front of a large pile of lumber. The man had a lighted match in his hand. Despite the fact that the guard gave chase, the man got away.

The FBI was called, and the suspect, who turned out to be an enemy alien and a Storm Trooper, was tracked down and arrested. Here, the alertness of the truck driver, was of real service to the country, and except for his report a fire might have been started which might have crippled vital shipbuilding for days.

Of course the FBI receives many reports that turn out to be false alarms. Some of these cases present humorous sides, but the FBI rule is always, if in any doubt, contact them, and they will act and determine whether suspicions are justified or not.



Serving on all our fighting fronts
 ... the **SUPER-PRO** "SERIES ♦ 200"

IT REQUIRES STAMINA to withstand the steaming wet climate of the Pacific Islands, or the frigid temperature of the far North. Our boys and our equipment are proving a match for the elements as well as our enemies. We of HAMMARLUND are proud to have aided in the successful battles of Guadalcanal.

THE HAMMARLUND MFG. CO., INC.
 460 West 34th Street, New York, N. Y.



HAMMARLUND

Variety Lines

On Alert for Alternate Items

• Radio retailers, like other merchandisers throughout the country, are continuously eyeing the markets for various sales items with which to replenish their dwindling stocks. As the demand for critical materials continues to grow, manufacturers, not wholly engaged in war production are becoming more and more versatile in the production of goods in which critical materials are not used, and many dealers are stocking articles today which heretofore were totally unfamiliar to them.

Of course it is difficult to get definite figures on how many radio retailers are selling this or that alternate sales item, but it is apparent that many are stocking glass coffee makers, for example. With coffee rationing a serious problem to the housewife, a new one-cup glass coffee brewer is said to be quite a seller. A feature of these glass coffee makers is that they can be made of *all* glass, including the filter, or with other designs employing a glass bowl or bowls, and other accessories made of non-critical materials.

It used to be that the sale of coffee

makers often included an electric stove, but with these present day scarcity of these, the coffee maker lends itself well to the occasion by permitting its use on any other source of heat, including gas, coal and kerosene ranges.

People Are Buying

Despite apparent shortages there are many items people want, and there are certainly numerous selections for the buyer in any retail business.

One retail store is showing a room dehydrating unit, designed to eliminate excess moisture. This operates with a chemical and does not have any moving parts. Other stores are stocking gifts and gadgets of various sorts, and some are stocking greeting cards.

A smart item making its appearance is a pitcher set, including tray made of water-repellent corrugated pressed pulp, in aquamarine finish. The pitcher has a silver plated neck, lip and handle, with plastic trim on handle and body. The stopper is made of black wood and cork.

A Department of Agriculture bulletin recently carried the suggestion of a distributor to the effect that deal-

ers could tie alternate lines in with various occupational phases in their particular localities. For example, it was suggested that in poultry sections dealers could stock feeds, brooders, incubators, etc., and in dairying areas, churns, wooden pails and earthen crocks. In fruit-growing portions of the country, ladders, garden tools and insecticides were suggested.

New Methods Needed

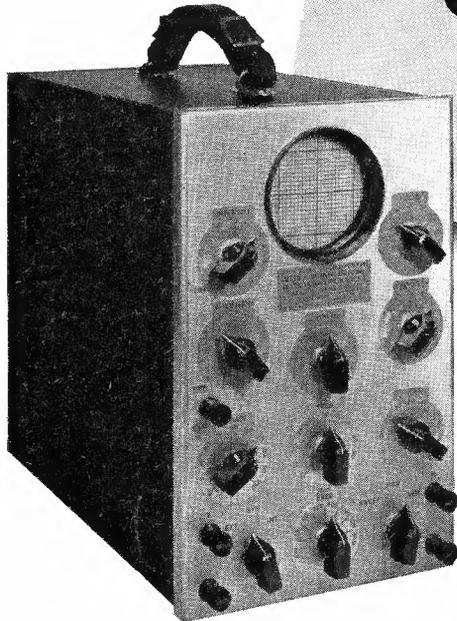
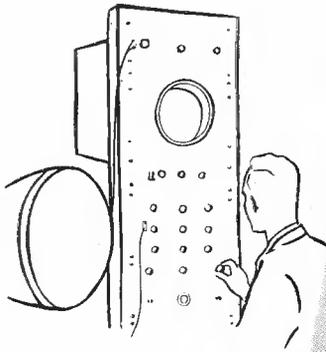
Keeping abreast of times like these is a tough job. Commenting on this, Sally Kimball, of Western Merchandise Mart, San Francisco, says in part: . . . "While designers and manufacturers were wrestling with the problems of maintaining adequate production of essential civilian merchandise under wartime conditions, the majority of retailers have been enjoying a gratifying business boom. . . . Today, however, with prewar home furnishing stocks materially depleted, retailers are becoming almost solely dependent upon the ingenuity and ability of manufacturers to produce sufficient quantities of alternate replacement merchandise to meet market demands. It is estimated by many retailers, particularly in war industry areas, that by the end of June prewar inventories will be practically exhausted."

New Lines for Retail Dealers

Some of the new lines that have been offered radio dealers are suggested by the Simon Distributing Corp., 25th and H Sts., N.W., Washington, D. C. Games for that quiet summer at home that most of us will find our lot in wartime continue to appear. Put out by Wilson, they are Eight-Ball, Dic-Doc-Dart, Give and Take, Cardart, etc. For the more practical-minded customer Kellogg brushes offer wide variety of selection. Sand boxes with canvas tops for children, cookie jars, figurines, stainless steel kitchen slicers, wooden coat-hangers are of interest to housewives and mothers. Further are suggested the O-Cedar products for cleaning and polishing about the house; Glas-bake ovenware. For those whose family are away in service the window flags with service stars are offered. Framed decorative prints are also featured, listed as Mirrotone Paintings and Fine Art Pictures.



"Tom-Tom nothing! It's a transmitter and receiving set!"



● Type 164-E Oscilloscope here shown is the small, convenient, popular-priced instrument for laboratory, shop and maintenance use. A favorite for field work because of minimum power consumption, compactness, light weight.

● 3-inch cathode-ray tube. Single-stage vertical amplifier with approximate voltage gain of 43. Horizontal amplifier with gain of approximately 55. Deflection-plate terminals of cathode-ray tube accessible at rear without removing case.

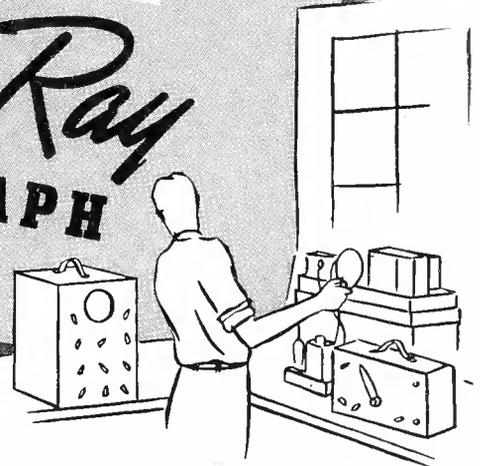
● Amplifier-type sweep circuit of unusually wide range prevents any interaction between various controls. Elimination of return trace of sweep signal provided by modulation of grid of cathode-ray tube, by means of frequency-discriminating network.

● Operates on 115 or 230 volt 40-60 cycle A.C. 50-watt power consumption. 1 ampere fuse protection. Dimensions: 11 $\frac{1}{2}$ " high; 7 $\frac{3}{8}$ " wide; 14" deep. Weight, 20 lbs.

● The DuMont line includes larger and more elaborate oscilloscopes, such as Types 175-A and the very popular 208. Also expanded-frequency-range Types 224-A (3-inch) and 241 (5-inch). Accessories such as electronic switch placing two or more signals on single oscilloscope screen; the low-frequency linear-time-base generator, etc. There is a DuMont instrument to meet every oscillographic requirement.

If you can't afford to guess,
you can't afford to be without a

DUMONT Cathode-Ray OSCILLOGRAPH



► Here's the most versatile of all test instruments. Discloses instantly what's taking place in simple or intricate circuits. Plots unknown variable voltage against a time reference. Utilizes electronic beam of negligible inertia for its indicating pointer—the ideal means of plotting rapidly changing quantities that could not be plotted with any mechanical means. Furthermore, such an electronic beam indicator cannot be damaged by application of over-voltage to its deflection system. Again, requiring but negligible operating energy, this indicator does not burden the source of the phenomenon with a load that might disturb delicate operating characteristics and give false indications.

Truly a *thousand instruments in one*. Conversely, *the instrument of a thousand uses*. Certainly a "must" in radio and electronic servicing, maintenance, research, production, and of course military activities. And when it bears the DuMont seal of the pioneer in this field, it reflects continuing research, engineering and up-to-the-minute refinements.

Remember, if you can't afford to guess, you can't afford to be without a genuine DuMont Cathode-Ray Oscilloscope.

► Consult your jobber regarding DuMont Oscilloscope and Cathode-Ray Tubes.

DUMONT

**ALLEN B. DU MONT
LABORATORIES, Inc.**

Passaic • New Jersey
Cable Address: Wespexlin, New York

Today this flag flies over



From this world headquarters for radio-electronic research flow new weapons, new discoveries and inventions vital to the winning of an Allied victory!

TODAY, over RCA Laboratories, flies a new distinguished battleflag—the coveted Army-Navy “E” Award.

One of the few laboratories in America to receive this award, RCA is at once proud of this distinction, and humbly aware of the responsibilities that it imposes. For much of the progress of the entire radio-electronic industry stems from the work done in these laboratories.

It was perhaps with this thought in mind that—at the dedication of the RCA Laboratories in Princeton—the Chief Signal Officer of the Army called them “The Hidden Battlefront of Research.”

HIDDEN—because, for the duration of the war, this magnificent building of 150 separate laboratories must be closed to all but the scientists and research technicians who are working on radio-electronic instruments important to our military effort.

BATTLEFRONT—because in the waging of modern warfare, radio-electronics is of first importance. It follows the flag and the fleet—locates the enemy—flashes urgent orders—safeguards the convoy—guides the bombers—directs the artillery—maneuvers the tank. This science fights on every front.

And when that certain day of Victory comes, RCA Laboratories will be devoted to the happier task of making our peacetime world richer, safer, more enjoyable and more productive—through new and finer products of radio, television and electronic research.

OTHER SERVICES OF RCA WHICH HAVE EARNED OUR COUNTRY'S HIGHEST WARTIME AWARDS



The Army-Navy “E” flag, with two stars, flies over the RCA Victor Division plant at Camden, New Jersey.



The Army-Navy “E” flag, with one star, has been presented to the RCA Victor Division at Harrison, New Jersey.



The Army-Navy “E” flag, with one star; also the U.S. Maritime Commission “M” Pennant and Victory Fleet Flag have been awarded to the Radiomarine Corporation of America in New York City.

*A Service of
Radio Corporation of America*



RCA

WORLD HEADQUARTERS

America's Secret Battlefield
RCA Laboratories



Laboratories

FOR RADIO-ELECTRONIC RESEARCH

Traffic Stoppers

Summer Window Displays Easy to Make

Many radio shop owners find that labor and material shortages are not the only problems confronting them when they attempt to "do" their own windows. Often ideas are lacking, and the following suggestions from a large crepe paper manufacturer may prove helpful.

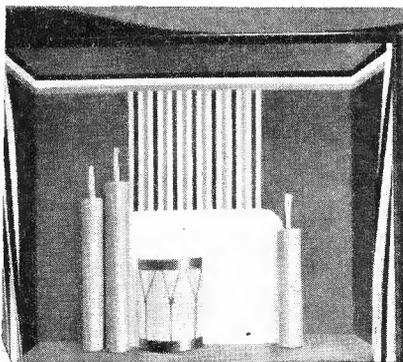
For July 4th, a patriotic theme is handled in an unusual manner, using red, white and blue paper. Install about a week before the "Fourth."

Large areas of national blue are massed in the background, and there is a center panel of printed striped red, white and blue crepe paper, and twisted drapes of the same stripe at the sides of the window. These drapes are made by pre-stretching the crepe as much as possible, pleating and tacking at the top of the window and then twisting loosely. Tack at the floor to hold in place. Use a tri-colored streamer or cut a piece from the printed crepe to finish off the top.

Simple Directions

Panel, drum and firecrackers are used in the foreground, and they may be made and assembled before the window is installed. The foreground panel is cut from a piece of wallboard, with one corner rounded. This panel can be painted white or covered with a piece of white cardboard. Make the drum of white cardboard, scored at either end for the flaps with which it is attached to the wallboard.

For drum cords, cut two-inch strips of red and blue crepe paper and twist each tightly, stretching as you twist. Now twist the two colors together. While the drum is out flat, measure for the center and attach one cord at this point, first slipping cord through a cut-out star or seal. Tape the cord to the drum. Repeat, spacing cords evenly across the front of the drum. Cut wide strips of blue crepe paper for bands at top and bottom of drum. Tape to back of the cardboard and bring around to the front, making certain that the right side of the crepe is out. Now stretch smoothly, but not too tightly, across face of drum, and attach at back. The crepe



A timely "Glorious Fourth" window described herewith.

bands will stretch into place as you bend the drum. To secure the drum to the wallboard panel, tack one flap to the panel and bend drum until it forms a semi-circle against the panel. Tack the other flap to the panel, making certain that the sides of the drum are straight, and that it stands evenly.

The firecrackers are rolls of red cardboard placed at each end of the panel. The wicks are made by stretching and twisting the full width of a fold of white crepe paper. Cut this twisted section in three pieces and tape to the inside of the rolls. Place the panel about 2 feet from the back.

This display may be used to show radio sets, records and record players, or may be used by a repair organization for the display of tubes

and various parts of a radio, describing, through the use of small cards, the value of these parts and tubes to manufacture associated with the war.

A booklet, "Display Ideas," showing other attractive window trims may be had by requesting same from Denison Mfg. Co., Framingham, Mass.

Display Posters Offered by Government

Radio retailers, seeking striking and timely posters to tie in with the war effort, may obtain them from the government, free of cost, upon request to the Division of Public Inquiries, OWI., Washington, D. C. The titles are as follows:

- Give It Your Best
- United Nations Fight For Freedom
- Remember December 7th
- Avenge December 7th
- Become A Nurse
- Americans Will Always Fight For Liberty.
- They've Got More Important Places To Go Than You
- I'll Carry Mine, Too!
- Guard Your Family's Health
- Plant A Victory Garden
- Where Our Men Are Fighting, Our Food Is Fighting
- Do With Less So They'll Have Enough
- Battle Begins With Your Job
- Next Of Kin Has Been Notified
- When You're A.W.O.L.
- Freedom From Fear, Freedom From Want, Freedom Of Speech, Freedom Of Religion
- For Their Future, Buy War Bonds
- Remember Me? I Was At Bataan
- Rationing Means A Fair Share For All Of Us
- A Careless Word—A Needless Loss
- If You Tell Where They're Going, They May Never Get There

Bright window of Heiges Radio and Electric Store, 83 E. State St., Sharon, Pa.





Only M. I. D. graduates need apply

● **M. I. D.**—Material Inspection Department—is the first of many watchdogs that guard Sylvania Radio Tube quality. Before acceptance for precision fabrication, molybdenum, nickel, mica, strip steel, glass, plastics—all materials delivered—must pass exacting tests and graduate from M. I. D.

Here a trained inspector subjects tungsten to a microscopic test. From her table, it will pass on to micrometer and tensile strength measurements, mechanical and other tests.

And, once accepted, all materials that go into Sylvania Radio Tubes undergo successive quality inspections through every step of manufacture. Thus, Sylvania's reputation for specialization in electronics is jealously guarded by hundreds of alert and painstaking inspectors on watch for the microscopic flaw.

That is why you can specify Sylvania Radio Tubes and Electronic Devices with confidence that the name they bear is a guarantee of quality.

**QUALITY
THAT SERVES
IN WAR**



SYLVANIA

ELECTRIC PRODUCTS INC.

Emporium, Pa.

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

RADIO Retailing TODAY • June, 1943

47

New Order Bans Radio Deliveries

Servicemen Disturbed by Eastern Gas-Saving Regulation by ODT Which Classifies Radio Along with Antiques and Ornamental Shrubs

• Under a new Office of Defense Transportation order, which became effective May 27th, 1943, in certain Eastern areas where gasoline shortages exist, the retail delivery of radios is prohibited, and the maximum wholesale deliveries of radios limited to two such deliveries a week.

Listed in section 13 of appendix 2, radios and phonographs are grouped with ornamental shrubs, nursery stocks, toys, novelties, jewelry, furs, and antiques.

Immediately following news of the ban OWI spokesmen could not definitely state whether the order applied to the delivery or pickup of repaired radios from the service shop, but stated they considered the order did apply to the delivery of *all* radio receiving sets.

Later, RADIO RETAILING TODAY was given an official explanation by a spokesman for ODT who stated that radios repaired or to be repaired could not be delivered, thus definitely clearing up this question for the time being. This means, explained ODT, that repairmen cannot deliver receiving sets of customers even though the sets are now in the serviceman's shop, nor is the serviceman permitted to transport a set from a customer's house to his shop.

However, it is stated that the ODT order 17, and amendment 3, pertains to *commercial* vehicles only.

Repairmen Seek Explanation

While new and startling developments in conservation measures continued to make the front pages, radio repairmen had been left in the dark on the status of pick up and delivery of repair work, and shortly after the delivery curtailment order was an-

nounced, their attempts to get the repair-delivery question clarified were without results. All repairmen interviewed by RADIO RETAILING TODAY stated strongly that they could not believe that the order pertained to repaired sets, but were unable to justify their beliefs by any sort of official interpretation.

It was the feeling of radio men generally that the essentiality of home radio had been definitely settled, and therefore they could not understand the delivery ban on retail radios, much less the official and unofficial opinions that the ban included repaired or to-be-repaired receivers.

Follows 40% Cut

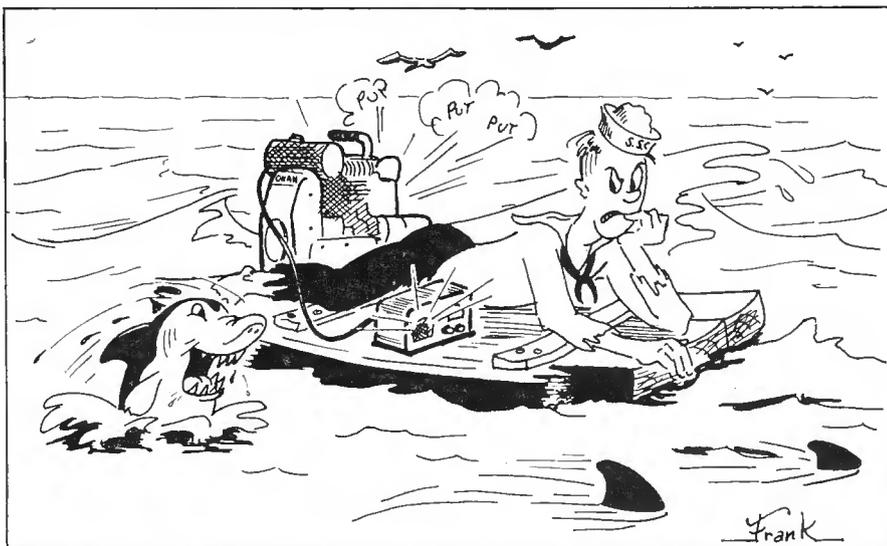
The order followed closely upon the heels of the announcement of ODT that truck, bus and taxicab mileage was to be cut to 40 per cent, effective

be up to the commercial vehicle operators themselves to "space out" the "T" rations now in their hands to cover the extra 25 days being added to the current ration period.

Limited Applicability

Both the delivery curtailment order and the ration slash are operative only in the following section of the country:

In the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania (except that portion which lies within the corporate limits of the cities of Sharon, Sharpsville, Farrell and Wheatland), Rhode Island, Vermont, Virginia (except the portions which lie within the corporate limits of the cities of Bristol and Bluefield), the District of Columbia, and the portion of West



Courtesy D. W. Onan & Sons

"Try our Fresh Fish Today—Finkels Market—signing off"

May 22. This reduction was affected in this manner: the OPA at ODT's request extended from June 30 to July 25 the valid period for all current "T" gasoline rations in the stated area. ODT estimated that the slash in commercial vehicle mileage will save a net of 20,000 barrels of gasoline daily, and stated that it will

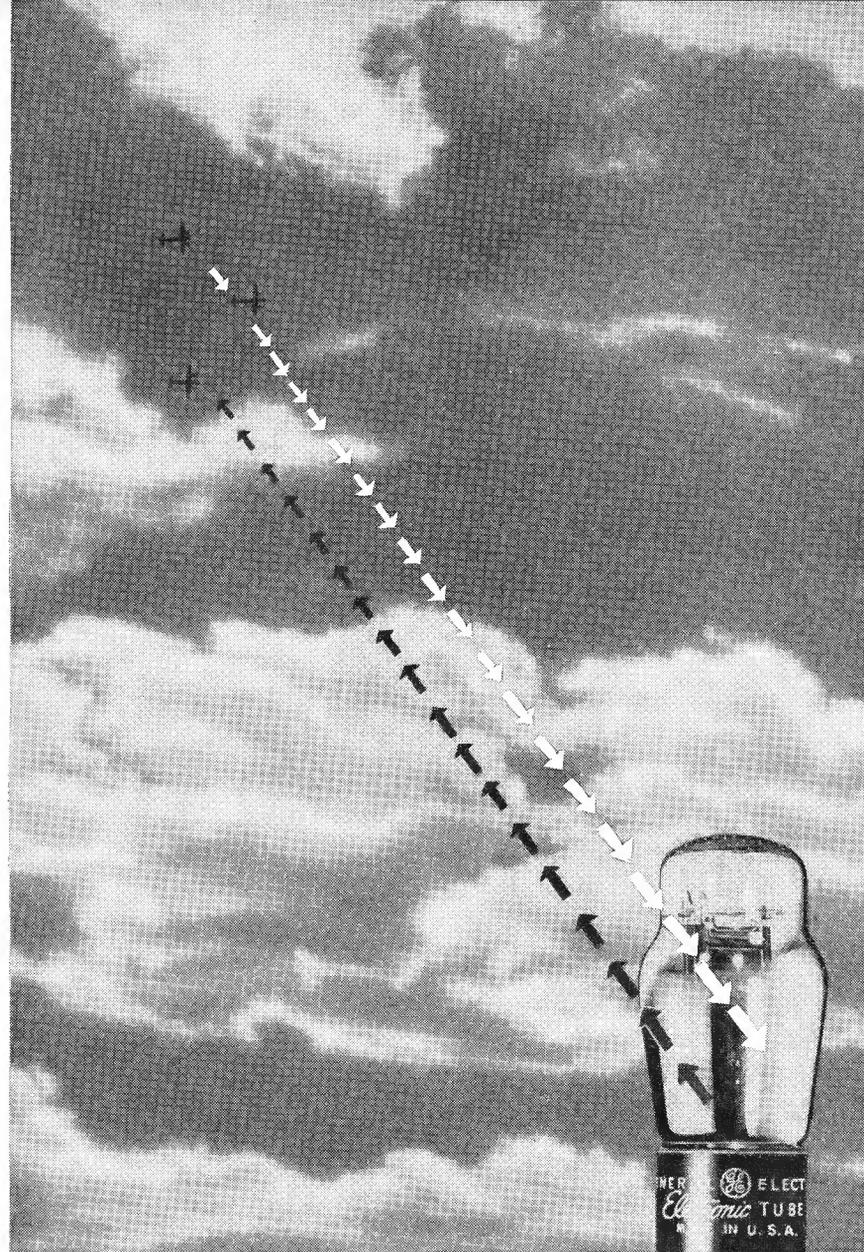
Virginia which lies within and east of the counties of Mineral, Grant and Pendleton.

The 40 per cent cut order clarifies the position of vehicle operators who regularly cross from the critical area into the non-critical area. Such operators will not be able to use their

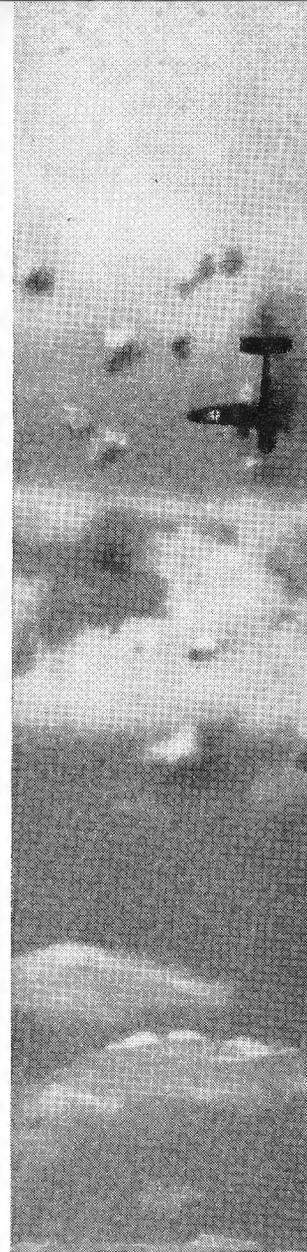
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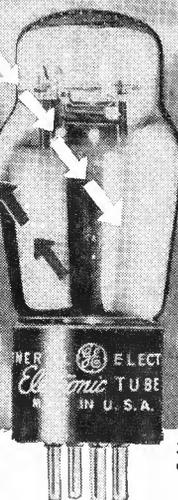
1. Enemy planes rise from distant airfields.



2. Radar sends out beam of ultra-high-frequency waves, reflected back to instruments which determine planes' location, speed, and direction.



3. Interceptor planes then surprise and destroy the advancing enemy.



The facts about RADAR

"The whole history of Radar has been an example of successful collaboration between Allies on an international scale."

THE NEW YORK TIMES, MAY 16

THIS amazing electronic invention that locates distant planes and ships despite darkness and fog is a great co-operative achievement of Science and Industry.

In this country and in the British Isles, over 2000 scientists and engineers, some

working alone, some in the Army and the Navy, many in research laboratories of colleges and industrial firms, joined eagerly in the search for Radar knowledge.

Team-work that succeeded. Once this electronic device had been perfected, industry after industry rallied to the nation's call to manufacture Radar. General Electric is proud to have played a large part, with other manufacturers, in supplying to the Army and Navy this key weapon whose peacetime applications hold so high a promise.

Electronic aviation tomorrow. As early as the Twenties, General Electric engineers and scientists were developing the kind of high-frequency tubes, circuits and apparatus that now make Radar possible. Thus long before Pearl Harbor, General Electric was able to build Radar equipment. Post-war applica-

tions of Radar will be many. Planes will land blind. Transoceanic liners will slip safely into fog-bound harbors.

In addition to Radar, General Electric is supplying to the Army, Navy, and Marines radio transmitters, antennae and receivers, carrier-current equipment, all kinds of electronic tubes, electronic measurement equipment, and monitors. There is no better assurance that G-E home receivers, after the war, will be of outstanding quality! *Electronics Department, General Electric, Schenectady, New York.*

Tune in General Electric's **WORLD TODAY** and hear the news from the men who see it happen, every evening except Sunday at 6:45 E.W.T. over C.B.S. . . . On Sunday evening listen to the G-E Mazda Lamp program over N.B.C. network.

GENERAL ELECTRIC

G-E employees are now purchasing over \$1,000,000 in War Bonds weekly

Radar

(Continued from page 21)

search Laboratory to outline in detail the theoretical military applications. In 1935 a big boost to radar's development came when the House Naval Appropriations Committee on its own initiative allotted \$100,000 for research purposes to the Naval Research Laboratory.

By this time the Bureau of Standards and the Naval Research Laboratory were cooperating with the Army regarding methods of detecting aircraft by utilizing ultra high-frequency radio waves. The War Department has stressed the importance of this project, and constant liaison has been maintained between the Services.

In June, 1936, at the direction of Rear Admiral Bowen, then Chief of the Navy's Bureau of Engineering, plans were made for the installation aboard ship of a complete set of radar equipment. The following years were spent in designing and manufacturing a practical shipboard model, and after continual trials, a set of radar, manufactured by the Naval Research Laboratory, was installed on the USS New York late in 1938. During the first three months of 1939, this equipment was tested exhaustively at sea during the winter cruises and battle maneuvers. As a result of these tests, the Commanding Officer of the USS New York enthusiastically recommended that the work be continued, and Vice Admiral Alfred F. Johnson, USN, commanding the Battleship Division, stated, "The equipment is one of the most important radio developments since the advent of radio itself."

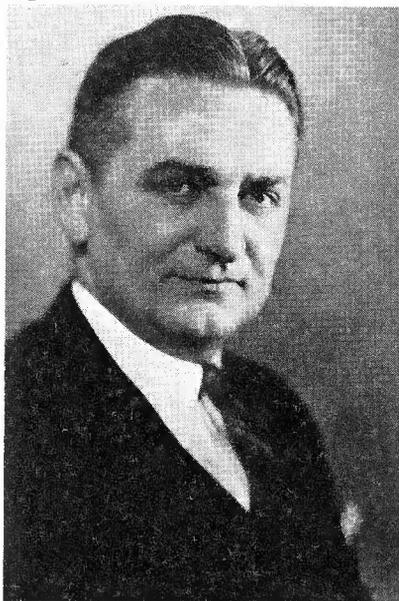
Contract Awards in 1939

After the decision was made to develop additional radar sets, and it was emphasized that the immediate procurement of this material must not interfere with the progress of the development, in October, 1939, contracts, on a bid basis, were awarded the Radio Corporation of America for manufacture of six sets of aircraft detection equipment patterned after the original model installed in the USS New York. Meanwhile, the Navy's statement noted that by this time two of the major electronics laboratories in the country, Bell Telephone and RCA, were cooperating with the Naval Re-

search Laboratory on radar research and development.

The statement pointed out that major commercial development of radar equipment began in August, 1940, after Rear Admiral Bowen persuaded Charles E. Wilson, President of the General Electric Company, and now Vice Chairman of the War Production Board, to institute radar manufacturing at the General Electric plants. Mr. Wilson, impressed by the Navy's demonstration of radar, reorganized General Electric's Radio Division under Dr. Walter R. Baker to become the first radio company to transfer all of its radio engineers to radar work. Subsequently, General Electric was awarded a large contract for radar equipment for Naval

Outlines Electronic Jobs



How electronic devices are now doing many jobs for industry in a better, faster or cheaper way, was described by D. J. Finn, general sales manager of the Industrial & Sound Division, RCA Victor Division, Radio Corp. of America, in a recent speech in Philadelphia. Mr. Finn is confident that "many more of these jobs will be uncovered as time goes on, and as we are allowed to draw back the veils of secrecy created by the war."

vessels. And in October of 1940, after an appeal by Rear Admiral Bowen, the Westinghouse Electric Company reorganized its radio division and was awarded a large Navy radar contract. In the same month of 1940, Rear Admiral Bowen, then head of the Navy Research Laboratory, was named coordinator of all phases of the Navy's radar program.

Turning to the British phase of ac-

tivity in radar, the statement noted that in September, 1940, representatives of the British Technical Mission exchanged much technical information relating to radar at conferences with representatives of the Naval Research Laboratory and the Navy Department. During this conference, it was found that the British equipment for detecting aircraft was similar in many respects to that developed by the Navy, and members of the British Mission stated that the British development has resulted from articles reporting the preliminary work between 1926 and 1930 of Dr. Taylor and Mr. Young, of the Naval Research Laboratory, and Dr. Breit and Dr. Tuve, of the Carnegie Institute, studying the height of the Kennelly-Heaviside layer. The statement added, "with this preliminary study as a base, the British independently had developed their radar system and independently had arrived at frequencies and circuits very similar to those developed in this country."

Studied British Methods

By the beginning of 1941, the General Electric, Westinghouse, RCA, and Bell Telephone laboratories were carrying on research and undertaking commercial production of radar. During 1941, Lt. Comdr. (now Commander) David R. Hull, USN, Assistant to Admiral Bowen, was put in immediate charge of Naval contacts with all private, commercial, and governmental activities engaged in radar research and development, and in this capacity he supervised the development of models which resulted in the first quantity production of many types of radar equipment. Commander Hull is now in charge of the Navy Radio Division's Design Branch.

Commander (now Captain) Jennings B. Dow, USN, spent the greater part of 1941 in England obtaining information on British radar methods, and upon his return to the United States organized the Radar Branch of the Radio Division, Bureau of Ships. He now heads the entire Radio Division. Previously, radar work in the Bureau of Ships had been conducted by Lt. Comdr. (now Commander) Samuel M. Tucker, USN.

The Navy Department also credited with having made major contributions to the development and use of radar Lt. Comdr. (now Captain) M. E. Curtis, USN, who is now in

RADIONICS

with its subdivisions of Radio—Electronics and Radar
is speeding the Victory

What about the FUTURE of Radionics? At present, we can only speculate on what post war product developments in the larger field of Radionics will be, or what they will mean to you. But we do know that post war *RADIO* will mean the re-awakening of your business. Post war radio *must* be good if your business is to be good.

So we suggest right *NOW* you ask yourself some questions about your radio business and its past; get some answers on its future.

Question:

"Which brand of radio moved off my floor at the most rapid rate after civilian production ceased... after the sales, advertising and promotion pressure were called off?"

Check which in the order of movement.

_____ Best
 _____ Second Best
 _____ Third
 _____ Last

We know what your answer will be from the reports, nationwide, that Zenith was fastest-moving. Zenith, despite heavy production *before* the war needs shut off civilian radio, moved first off the retail floor and first into the home, when the selling heat was off and products moved alone on their merits and the reputations of their makers.

Never was there a better test of radio brand merit. Now that you have checked the past, think of the future. Better Zeniths are incubating right now.

Next month—another question important to your business. Watch for it. National manufacturers are making post war plans. This is a good time for you, the retailer, to lay some plans, too.



ZENITH RADIO CORPORATION, CHICAGO

BETTER THAN CASH

U. S. War Savings Stamps
and Bonds

ZENITH
REG. U.S. PAT. OFF.
 LONG DISTANCE RADIO
REG. U.S. PAT. OFF.
 RADIONIC PRODUCTS EXCLUSIVELY—
 WORLD'S LEADING MANUFACTURER

Radar

(Continued from page 50)

charge of all fleet radio communications on the staff of Admiral Ernest J. King, Commander-in-chief of the Navy; Commander William S. Parsons, USN, and Lt. Comdr. John F. Mullen, Jr., USN.

In conclusion, the statement noted that radar research is continuing and new developments are constantly being made with every manufacturer of any type in the electronics industry participating in the program. "Radar procurement," the statement said, "is one of the Navy's prime projects."

Records

(Continued from page 17)

quired by actual attendance. And these new groups of purchasers are not only discovering classical music a foil for machine-fatigue, but they have the money to pay for this better type of merchandise—in volume, as well.

Dealer Help

Much splendid dealer help has been sent out by the various recording companies, especially Victor, to familiarize the retailer with the history of the composer, the story behind all great compositions, and the drama of the opera, its individual stories and famous arias. It is important for the

dealer to take advantage of this instruction in any instances where he is not familiar with the facts, because many potential sales may be lost through an uninformed customer, or the questions a dealer is unable to answer. In connection with this it is also vital for the dealer to put this knowledge into his window displays by using the facts he knows about the less familiar classics to excite consumer interest.

Further evidence of the public's desire to expand its understanding of fine music, resulting in enlarged record library sales, is the excellent acceptance of pocket-sized paper books put out by Columbia Recording Corp., telling the interesting facts about the classic discs, which are sold separately, in addition to the albums they describe.

Take advantage of the record boom this summer. Help recordings to do their part in servicing civilian morale.

Deliveries

(Continued from page 48)

extended time "T" coupons in the non-critical states, the ODT pointed out. To obtain third quarter rations for operating in these non-critical states after July 1st, these operators must apply to their local ODT district office for a special supplementary certificate of war necessity.

The delivery curtailment order provides that on or before June 8th, every motor carrier shall establish, within the territory presently served by each operating unit of such motor carrier, delivery areas or delivery routes that are neither duplicating nor overlapping, and each carrier shall prepare and currently maintain an appropriate map showing the routes so established or the territorial limits of such delivery areas, for each operating unit.

Sunday Deliveries Out

The order also prohibits all Sunday deliveries, except of ice, fresh milk and cream "or other products when delivered in combination with fresh milk or cream."

An ODT release also appealed to the public not to use buses and taxicabs in the Eastern gas shortage area for amusement, recreation, social and other non-essential purposes.

"There is no gasoline available for non-essential uses," the ODT declared.

Stating that war workers face a crisis in their automobile transportation before the end of 1943, "making essential the continuation and strengthening of conservation measures," was the conclusion reached by the Public Roads Administration of the Federal Works Agency, and the Highway Traffic Advisory Committee of the War Department, in commenting upon the tire situation.

Attractive new interior of the Yale Amusement Co. store at New Haven, Conn. Record racks hold almost 18,000 records. The entire job, including a new store front, was designed and executed by the A. Bitter Construction Co., of New York City.



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 several other leading radio magazines on our list. 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 36
North Adams, Mass.

OSCILLOSCOPE WANTED—RCA, Clough Brengle, Supreme. If available, please advise immediately, stating best cash price. F. A. Lanning, 321 Columbia St., Utica, N. Y.

WANTED—Tube tester, Rider's manuals, VTVM, and other radio service instruments. Describe and name best price. W. S. Moore, Box 203, Allen, Oklahoma.

INTER-COM SYSTEMS WANTED—Need intercommunication systems for office. Describe and name best price. Garcia, Box 883, Rio Piedras, Puerto Rico.

WANTED—Condenser checker (de luxe Sprague Tel-O-mike preferred); also Thordarson transformer 90S13; Thordarson Choke T15C54; and Thordarson Choke T67C46. State price and condition. John E. Loraine, 211 Summer Avenue, Newark 4, N. J.

TUBES FOR SALE—6 and 7 series; also five 80 and five 25L6 and many others (but no 35Z5 or 50L6). I also offer one test oscillator, 50 condensers, and two radio courses. Will trade for condenser checker or Sprayberry Radio Course or sell for cash. Radio Service, 1311 Jefferson Ave., Houston 3, Texas.

RECORD PLAYER FOR SALE—Portable a-c type with built-in amplifier. Only 3 mo. old—like new. \$25 cash. Want phono-radio recorder, table model or portable; also used radios, tubes, condensers and resistors. Will pay cash. P. W. Hoover, 907 Lippert, N.E. Canton, Ohio.

WANTED FOR CASH—A horn of metal type, conical or preferably exponential. Throat diam. 3/4" to 1 1/2"; length 4' to 6'; bell or mouth diam. 2' to 3'. Also want Miles Filmgraph recording machines in used condition or parts for same. Especially need lateral cutter transports and idlers. Machine models BB and DD. All offers considered and will pay cash. Hurry! First offers may be accepted. J. Ruiz, 215 E. 66th St., New York 21, N. Y.

WANTED—1000 ohms per volt Weston milliammeter in good condition or like meter. Will pay cash. Cadet Midshipman B. W. Balagh, USNR, 1115 Palmer Hall, U. S. Merchant Marine Academy, Kings Point, N. Y.

WANTED—One A-C, or A-C, D-C voltmeter. All replies will be answered. Edmund H. Dean, Falls Village, RFD, Conn.

EQUIPMENT WANTED—Need good oscilloscope, also a good multitester or analyzer, R.C.P. preferred. Describe and name best price. D. C. Hill, R7, Yakima, Wash.

INSTRUMENTS FOR SALE—At pre-war prices: new Million oscillator model Q; new Supreme V.O.M. model 543; two new Supreme tube testers model 589; one new American combination tube tester and V.O.M. model 4102; one new Million V.O.M. model D; one new Supreme frequency modulator 529; also one Philco oscillator and one Clough-Brengle OCA oscillator. Bill Gall, c/o Station WEBQ, Harrisburg, Illinois.

FOR SALE—High grade milliammeters, thermo-couple ammeters, 3" and 4"; A-C voltmeter 0-10, 2". D.C. 0-50 volt front panel 5". Best offer takes them. M. G. Goldberg, 142 E. 4th St., St. Paul, Minn.

OSCILLOSCOPE TO TRADE—Will trade 3" C. B. model UF oscilloscope for Weston or Hickok multi-mefer or VTVM or other test equipment. W. Peters, 3652 W. 61st Place, Chicago, Ill.

PARTS FOR SALE—Hundreds of used radio parts of all kinds for sale cheap. What do you need? Want a used ohmmeter in good condition? Bill Gordon, Box 42, Oxbow, Sask., Canada.

OSCILLATOR WANTED—Precision E-200, Hickok 177, Weston 776 or any good make oscillator urgently needed. Cash. Vick Radio Service, Kershaw, S. C.

WANTED—Skyrider "Marine" or other receiver covering 200-400 kc. aviation band. Cash or will trade S-29 receiver or latest Supreme 599 VOM tube tester. S. W. Jeffcoat, c/o Airway Comm. Station, C.A.A., Greenwood, Miss.

FOR SALE—Radio replacement parts, tubes, condensers, resistors, speakers, amplifiers. Will consider swaps. What have you? Write for my complete list. F. U. Dillion, 1200 North Olive Drive, West Hollywood 46, California.

DIAGNOMETER FOR SALE—Supreme, AAA-1 in perfect order, not used more than a month. For best cash offer. C. C. McIllyar, 1700 East 21st St., Cleveland, Ohio.

SWAP OR SELL—A 6 volt amplifier using generator for plate supply. Also some transmitting tubes and parts, books, etc. Write for details. Keller Bush, 3105 Lafayette, Fort Wayne, Ind.

RIDER'S MANUALS WANTED—Vols. 9 to 13 incl. in good condition at reasonable price. Give full details. All letters answered. Frest Radio Service, 811 21st St., East Moline, Ill.

WANTED—New or used UTC Variatones VT1 and VT2. State price and condition. C. Huhn, 9012 102nd St., Richmond Hill, L. I., N. Y.

FOR SALE OR TRADE—6 Jensen all-weather horns less speakers. 2 Professional full-frequency cutting-heads, Universal 15-ohm. New RCA 167 R-F oscillator. Shure transcription pick-up. 12" Audak pick-up. 4 new 807 tubes. Need condenser analyzer, or what have you? Damon Transcription Laboratory, Midland Bldg., Kansas City, Mo.

CUTTING HEAD WANTED—Crystal type, new if possible. Describe and name price. Michael Thomas, 312 S. Brevard Ave., Tampa, Fla.

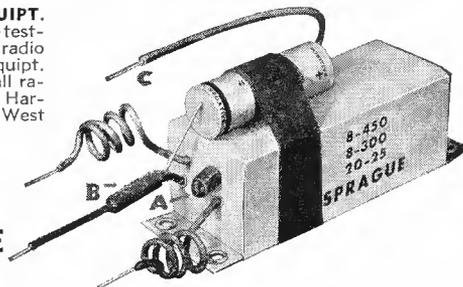
COMPLETE SHOP EQUIP. **WANTED**—Will buy tube tester, signal generator, and radio tester—or will buy equip. enough to start up a small radio repair shop. Charles Harmon, Third St., Chester, West Virginia.

TUBES & EQUIPMENT FOR SALE—RCA Acorn tubes, 9—No. 954 and 1—No. 955, \$3 each. Also Westinghouse 0-100 microammeter, 4" face, \$10; 1940—1 Superior Set Tester model 1180-S, comb. tube & set tester, \$15; 1940—1 Superior Inst. Co. signal generator model 1230, \$12. All in 1st class condition. Domestic Appliance Service, Montauk Highway, Bridgehampton, N. Y.

M-A METER WANTED—Need one O-1 m-a meter in good condition. State price. Sgt. Wm. E. Funke, H.Q. Btry. 74th F.A. Bn., San Rafael, Cal.

FOR SALE—C-B frequency modulator, model 81-A, in A-1 condition, \$15. Henry Wagner, 1144 Indianapolis Blvd., East Chicago, Indiana.

WILL EXCHANGE—Will trade G-E recorder and playback unit in leather case; one automatic record changer and recorder chassis; one Scott chassis; many small a-c, d-c radio chassis; also tubes, speakers, and other radio parts for what have you? Carroll F. Mills, 99 Curtis St., Reading, Mass.



Illustrating how a Sprague Atom Type UT-8 (8 mfd. 450 volt) replaces the 8 mfd. 450-volt section of a 3-section condenser rated at 8 mfd. 450 V.; 8 mfd. 300 V., and 20 mfd. 25 V.:

- Cut lead to defective section and tape end.
- Connect cut circuit lead to positive (+) side of Atom.
- Connect Cathode (-) side of Atom to common minus lead of multi-section condenser.

HERE'S THE PATRIOTIC WAY TO REPLACE A DEFECTIVE CONDENSER SECTION



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

What Washington Says —

Radio Repair "Essential Activity" Draft Forms

While radio repairing continues to be listed as an "essential activity," by the War Manpower Commission, radio retailers and service organizations are now urged to file new information with their local draft boards.

This information should be written evidence of the employment of registrants who maintain bona fide homes with children less than 18 years of age, born on or before Sept. 14, 1942.

The local board, it was pointed out, will thus be advised of the registrant's employment in an essential activity, and the employer will receive notice of the re-opening of the registrant's classification, any time it is undertaken by the local board. The employer, after receiving such notification, will have the opportunity to submit additional evidence of the essentiality of necessary men in his employ.

Form 42B, available in local board offices, should be used for the purpose.

New Use of 42B

Heretofore, Form 42B was used by employers to indicate men with dependents engaged in an activity essential to war production or in support of the war effort for whom a class 111-B deferment was requested. However, now that class 111-B, for the designation of such men, has been eliminated, Form 42B will be filed only for men with children who are in class 111-A.

The only fathers now being inducted under the Selective Service Act are those engaged in activities or occupations on WMC's non-deferrable list; farm workers who, without permission of their local board, leave essential agricultural pursuits for which they have been deferred, and fathers whose children were born on or after Sept. 15, 1942. Submission of Form 42B is urged, however, for men who have a child, or children, with whom they maintain a bona fide family relationship in their homes, to assure the employer that, if the time comes when such registrants are needed in the armed forces, he would receive notice of his employees' Selective Service status.

What "Essential" Means

Explaining the required status of those coming under "essential" repair status, the WMC bulletin describes such persons as "individuals qualified to render all-around repair service on the types of equipment specified. . . ."

While the WMC statement says: "While certain activities have been designated

as essential, this does not necessarily mean that all establishments engaged in that activity are essential. The decision must be made on an individual basis; the determination of the essentiality of an establishment depends upon its meeting one or more of the following criteria: The establishment must be:

A. Fulfilling a contract of the Army, Navy, Maritime Commission, or other government agencies engaged directly in the war effort;

B. Performing government services directly concerned with promoting or facilitating war production;

C. Performing a service, governmental or private, directly concerned with the maintenance of indispensable civilian activities, health, safety, welfare or security;

D. Supplying material under subcontracts for contracts included in A, B, or C above;

E. Producing raw materials, manufacturing materials, supplies or equipment or performing services necessary for the fulfillment of contracts (including necessary clothing and other supplies required by workers employed on these contracts) included in A, B, C, or D above."

Before any product, service or facility was included in the revised list of

essential activities, consideration was given each class to the extent to which the item is directly utilized for combat purposes, the degree of scarcity of supply; the relation of the product, service or facility to the operations of essential activities, and the extent to which the product, service or facility is needed in maintaining minimum civilian requirements under wartime conditions.

New Office to Aid Civilian Supplies

As a means of providing facilities to obtain consumer goods and services "adequate to maintain essential civilian life and the highest productive efficiency, to the end that the maximum productive power of the civilian populations may be attained in the support of the war effort," Chairman Donald M. Nelson of WPB has approved an administrative order setting up the Office of Civilian Requirements within the WPB.

Superseding the Office of Civilian Supply, the new agency is headed by Arthur D. Whiteside, who was appointed vice chairman.

Regulations provide that items allocated for consumer goods and services may not be diverted to other channels without authorization from OCR.

Revise Regulation to Put Orders on Par

Revising Direction No. 1 to CMP Regulation No. 3, WPB announces that the intention is to place rated orders of dealers, distributors, and jobbers on a par with orders in the same rating band bearing allotment numbers or symbols. The Direction does not have the effect of granting rated orders of dealers, distributors and jobbers preference over other orders in the same rating band not bearing allotment numbers or symbols.

Rating Explained

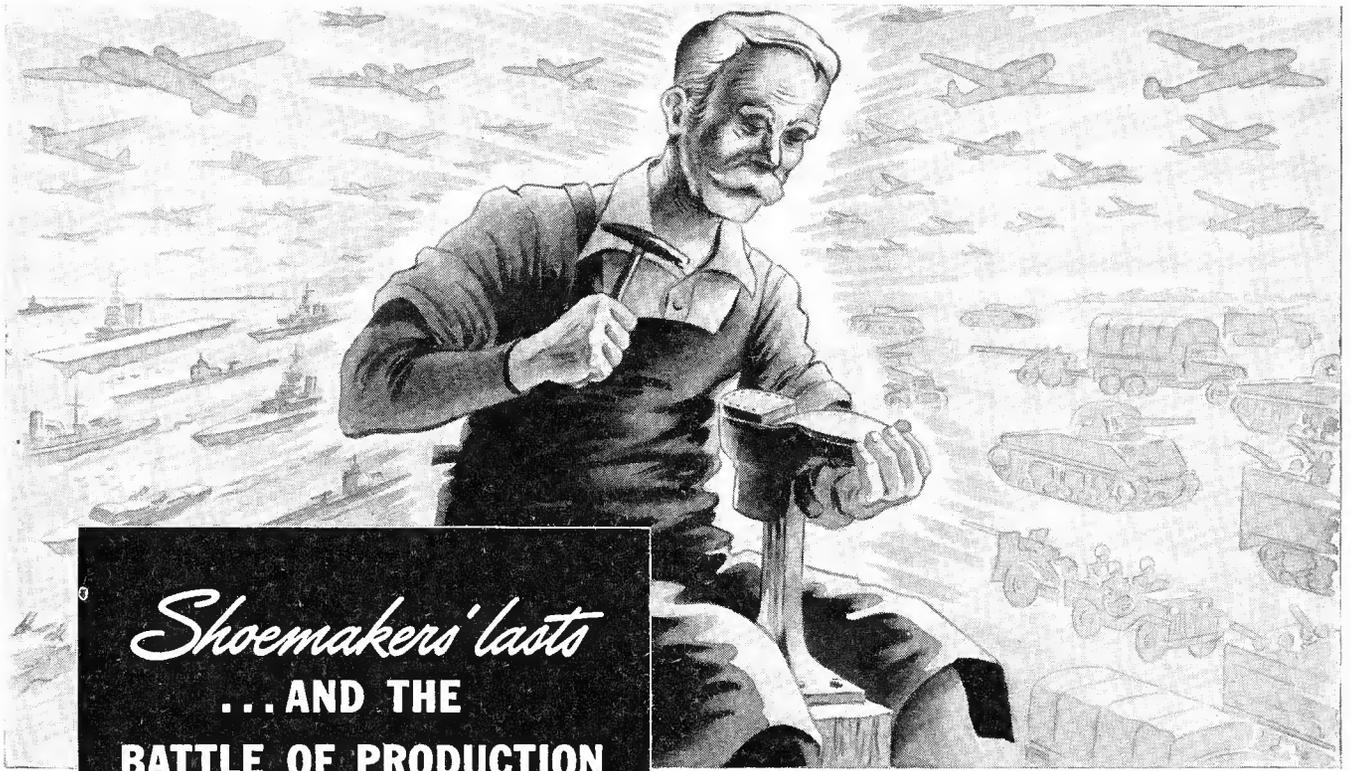
This means, says WPB, "that a dealer's order rated AA-1 would have preference equal to a manufacturer's order rated AA-1 bearing an allotment number. However, the dealer's order rated AA-1 would not displace a manufacturer's order rated AA-1 in a production schedule."

The Direction was also revised to apply the equality of dealers', distributors' and jobbers' rated orders to all such orders. Heretofore it applied only to those placed prior to Apr. 7, 1943, calling for delivery not later than June 30, 1943.

LT. COMDR. R. T. BRENGLE



Formerly head of the Radio Procurement Section, Bureau of Ships, Lt. Comdr. Brengle has been appointed Asst. Head of Radio Division, Bureau of Ships. Widely known in radio circles, he formerly headed the Ralph T. Brengle Sales Co. of Chicago.



Shoemakers' lasts
 ...AND THE
BATTLE OF PRODUCTION

“SHOEMAKER stick to thy last” may have been good advice once . . . but it doesn’t apply in the Battle of Production, where the ability of American industry to enter new fields and make new things has amazed the world.

Take Rola, for example. Recognized for years as a leading maker of Sound Reproducing Equipment, Rola’s principal war assignment became the manufacture of various types of transformers for the intricate communications systems of our Army and Navy Air Forces.

The specifications were unusually “tough” but Rola was equipped to do the unusual. Calling upon the skill and ingenuity of its people and upon an experience that dates from the very beginning of Radio Communications, Rola “tooled up”. New machines

were designed, new methods and processes devised, new tests and inspections employed, so that today the name “Rola” on a transformer is as much a hall-mark of quality as it is on the 25,000,000 radio loud-speakers that Rola has produced.

If transformers are a part of any product you are making, Rola solicits an opportunity to discuss your requirements with you. Many of the country’s foremost prime producers of communications equipment have found our product and our performance eminently satisfactory. We are sure you would, too. The Rola Company, Inc., 2530 Superior Ave., Cleveland, Ohio.

✓ ✓ ✓

RECEIVER OUTPUT • MODULATION • MICROPHONE
 FILAMENT • AUDIO INPUT • RADIO STAGE • POWER • CHOKE COILS
 HEAD SETS • RELATED ELECTRONIC ITEMS

★ **ROLA** ★

MAKERS OF THE FINEST IN SOUND REPRODUCING AND ELECTRONIC EQUIPMENT

Book Reviews

Principles and Practice of Radio Servicing

by H. J. HICKS

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

This book is a valuable source of information not only to experienced radio repairman but to the novice as well. This does not mean that the work is "elementary" to the extent that it is suited to the uses of learners only, but it is a rare combination of basic and highly technical information, expressed in an interesting style.

The second edition is really a new book. While it is true that some parts of the first edition have been retained, paragraphs and figures pertaining to obsolete methods or circuits have been eliminated. Much new material, such as signal tracing, frequency modulation, and modern antennas, has been added, and new diagrams and photographs are included.

The author, who is associate radio engineer at the Aircraft Radio Laboratory, Wright Field, Dayton, Ohio, is meticulous to the extent that no small, perhaps seemingly casual, detail is left out of his service instruction, and this, to the careful reader, is a means of absorbing step by step *all* of the salient features of learning to service thoroughly.

Reviews Elementary Principles

For example, the section of the book devoted to dynamic speakers, says: "Owing to the fact that the dynamic speaker usually handles more power and also because it reproduces the lower notes, special care should be taken to prevent every part of the chassis or cabinet from vibrating." Further on, the author says: "The felt ring around the edge of the speaker should be carefully replaced. If the joint between the speaker and its baffle is not practically airtight, the value of the baffle is largely lost and will result in the failure of the speaker to reproduce the lower notes." These are statements every experienced serviceman knows, and knows to be true, but some are apt to overlook their importance because of their seemingly elementary nature.

Starting with the fundamentals of magnetism and electricity, the book covers the essential principles of radio; complete information on tubes, test equipment, theory of radio-frequency amplifiers and of audio-frequency amplifiers, and has chapters on power supplies, systems of demodulation or detection; volume tone and frequency control, loud-speakers, anten-

nas and the elimination of man-made static; superheterodynes and frequency-modulated receivers.

An entire chapter is devoted to servicing radio receivers, commencing with radio soldering and going through all problems concerning operation and repair of radio and phonograph devices.

Public address systems are treated in a thorough and informative manner, and the book closes with a chapter devoted to the business side of radio servicing, stressing side lines, effective advertising, telephone selling and bookkeeping. Sells for \$3.50.

Simplified Radio Servicing by Comparison Method

by M. N. BEITMAN

Published by Supreme Publications, 328 So. Jefferson St., Chicago, Ill.

Starting with illustrations of diagram symbols, this book goes into the elements of electricity, and then into its simplified radio course, having sections devoted to resistors, condensers, coils, chokes and transformers, electrical circuits, tube characteristics; how a radio works, what goes wrong, and descriptions of various radio types, stressing the fact that out of the 50 million radio sets in the U. S., there are about 20,000 models, but only a "handful" of types.

Other sections are on how to localize trouble, early TRF a-c sets, 4 tube

midgets, a-c circuits, ballast tubes, superhets, early and modern; alignment and I.F., band switching methods, pushbutton tuning, automatic volume control, early and late model auto radios, vibrators, home battery sets, portable radios, and general hints on servicing a number of different makes.

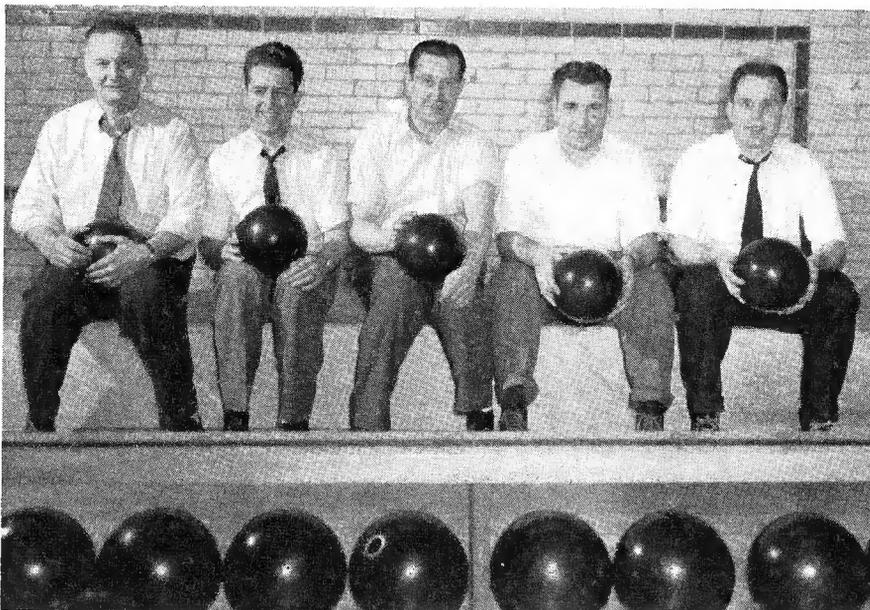
There are descriptions of automatic frequency control, radio testing instruments and signal generators, as well as material on television, public address and oscillators.

The first paragraph of the introduction reads: "You are now being introduced to a remarkably simplified technique of radio repairing. This new way of finding radio faults and repairing them is so revolutionary in scope, so different in application, and so effective in results, that one can hardly believe in its true possibilities. But this method will (in contrast to all other servicing methods) in 90% of all cases isolate the fault in minutes instead of hours and without instruments, permit checking of parts and circuits quickly without any special testers, and can be used to an advantage by beginners and experts."

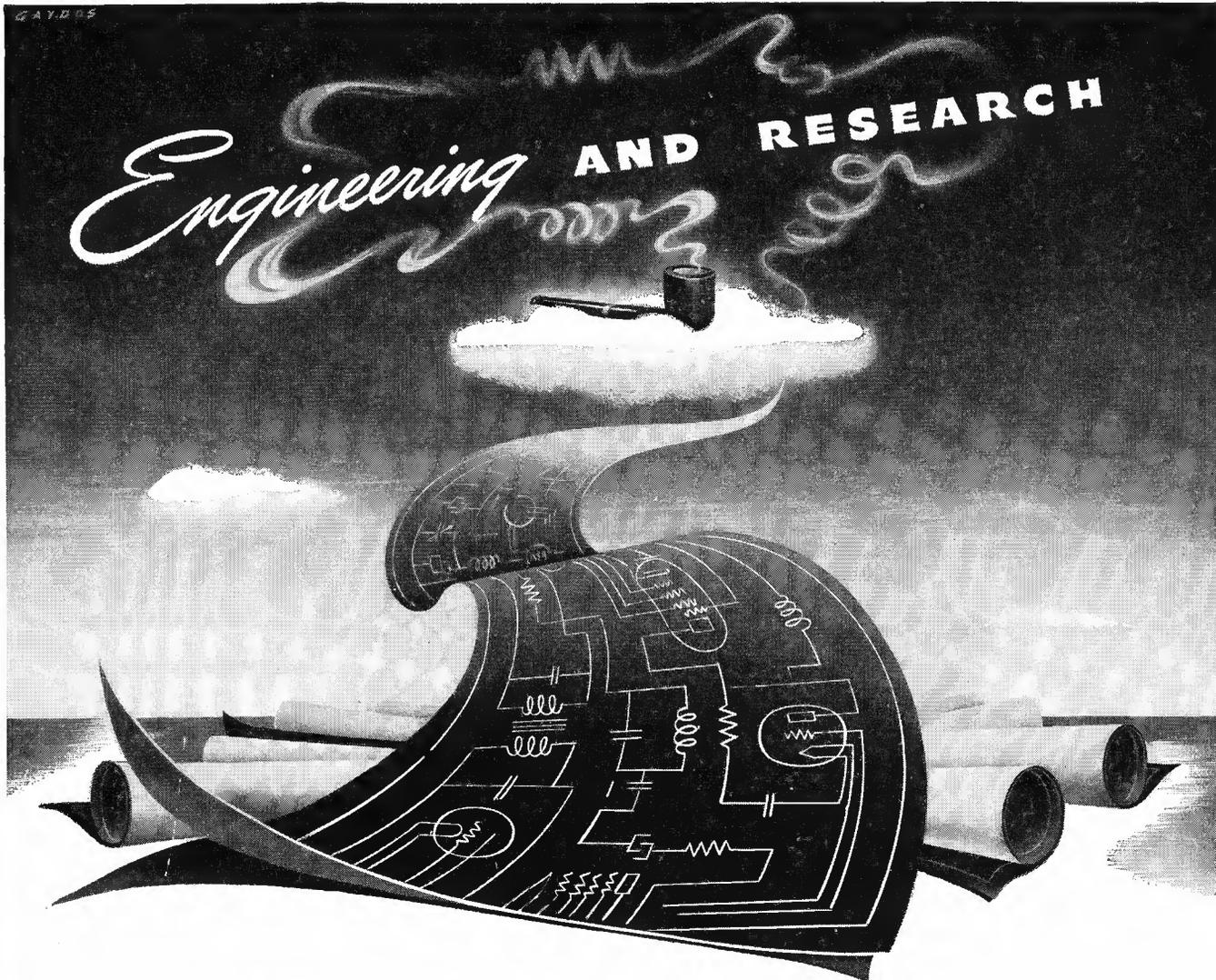
The book consists of 108 pages, and has dozens of illustrations.

Introducing their new all-purpose Mitchelite line of fluorescent fixtures for war industry, the Mitchell Mfg. Co. of Chicago describes them in Catalog 400, a complete, comprehensive 8-page 2-color job, with graphs, tables and charts to aid in solving lighting problems and to simplify the selection of the proper fixture for each job. The catalog explains all the new Mitchelite features, and has illustrations showing the mountings.

NEW CHAMPIONS, RADIO INDUSTRIES BOWLING LEAGUE



Admiral Radio team cinched the RIBL title for 1943. Left to right: Lovell Crawford, Ralph Cory, Ray Bernasek, Sam Squarda and Gene Walker. The League includes 12 radio teams, all working to make it one of Chicago's best.



Engineering AND RESEARCH

FROM PIPE-DREAMS to BLUE PRINTS

Deep in war work today, the Crosley division of Research and Engineering keeps an eye on the world of tomorrow.

For 2½ years Crosley engineers have pioneered in the newest fields of instruments, radio, radar and electronic applications, and in larger, complex mechanical apparatus.

Crosley fighting equipment is performing in every part of the world at temperatures from 70° below zero to 150° and more above, at sea level and at 6 miles above the earth, on shipboard or in planes, in the Tropics and in the Arctic.

Tolerances of one ten-thousandths of an inch and dial settings within an accuracy of one part in fifteen thousand are now part of a day's work at Crosley. When your business and ours returns to peace-time conditions, Crosley will be prepared to make fullest use of new inventions, new materials and new processes.

This is the second of a series describing the various departments working together as a team in the Manufacturing division of Crosley. The subject of this advertisement is Engineering and Research

CROSLEY

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



SCRAP IS POWER

YOU HELP
 ... the War Effort
 ... Your Customers and Yourself
 ... when you Salvage, in accordance with your Manufacturer's Instructions, all inoperative parts containing ...

CRITICAL MATERIALS
 Cooperate with your industry! Put vitally needed scrap back into the Scrap **TODAY!**

WPB TO EARMARK CIVILIAN RADIO TUBES

Following a session with the Civilian Radio-Tube Industry Advisory Committee, late in May, the Radio & Radar Division of the War Production Board announces that owners of home radio sets will have available a supply of radio tube replacements under an amendment to the War Production Board's Order L-265. The amendment is designed to insure that radio tubes, made for civilian sets, will reach home-receiver owners and radio repairmen, and anticipates an easing of the critical situation which had developed at one time in the past, in the supply of civilian radio tubes.

However, it is understood that the amendment does not interfere with the rising military requirements for tubes which are given the right-of-way at all manufacturing plants, but does forbid the domestic transfer of such tubes on order from major claimant agencies and on orders carrying preference ratings. Civilian orders, which need no rating, are filled by manufacturers on certifications that the tubes are being purchased as replacements for worn-out tubes. The amendment is designed to earmark civilian tubes and remove at least 85 per cent of them from the scope of preference ratings.

No Gas or Tires for Vacation Purposes

With critical shortages of rubber throughout the nation, and a dearth of gasoline in the East, it is evident that there will be a sharp curtailment in the use of car radios for picnic and vacation purposes. With practically no batteries for portable sets, their use, too, will be affected.

Stating that at this time it is impossible to give drivers using their cars for business all the mileage they would normally use, Price Administrator Prentiss M. Brown, issued a statement reiterating the OPA's policy to deny mileage except that in the "A" books for vacation travel.

Rubber Supply Still Short

There have been a number of requests from public officials and representatives of private groups in various sections of the country, stressing the value of vacations to war workers, which would represent a distinct build-up in morale and some respite from the pressure of stepped up production routines.

"Beyond a doubt the morale and efficiency of these large occupational groups would be improved if the burden of mileage rationing upon them could be lightened, but this has not been possible in view of our limited supply of rubber," an official statement pointed out. As long as it is necessary to restrict occupational drivers,

to grant millions of miles to vacationists would be a "luxury which we cannot afford in total war," said Mr. Brown.

Technicians, lawyers, salesmen, insurance adjusters, real estate men and others, are listed as "occupational drivers."

Fada Radio Sponsors News Broadcaster

On June 7th, the Fada Radio and Electric Co., Inc., Long Island City, N. Y., launched the most extensive radio campaign of its history when it began the sponsorship of news broadcaster Henry J. Taylor on WJZ, New



Henry J. Taylor

York. The program will be heard five times weekly, Monday through Friday, at 11:05 p.m., EWT.

The Fada campaign will be an institutional type, as the company is busy with war orders. The show is scheduled to run for 52 weeks.

Mr. Taylor is a Blue Network commentator whose war reporting work has taken him to 16 different foreign countries. He is the author of three books, and a contributor to several leading magazines here and abroad. Also an economist and business executive, Mr. Taylor's news analysis has won wide acceptance.

Western Fall Market To Meet in West

The Western Fall Market, showing exhibits of non-critical goods for sale, will be held in San Francisco July 12th to 17th, announces Frank K.

Runyan, vice-president. The meeting is held so that merchants can see what merchandise is available, to keep abreast of wartime changes in designs, prices and policies, and to confer on formulating future plans.

Philco Tells About Radar

Using 121 key newspapers in principal cities, Philco is telling the story of Radar, it was announced by James H. Carmine, vice president in charge of merchandising.

Radar, "the fabulous secret weapon whose miraculous power seeks out the enemy through fog, clouds, storms or darkness," is the subject of advertising explaining the heretofore zealously guarded secret of enlistment of the ultra-high frequency radio waves, upon which Radar is based.

Commenting upon the great tasks Radar is performing for the war effort, Philco also stresses what its importance to the world will be when hostilities cease, stating: "But even more important is the vision of the peacetime sequel," and concludes with the prediction that "in radio, television, refrigeration, air-conditioning, only the future can reveal the untold progress that will appear under the famous Philco name . . . when peace is made secure."

Sees Television Newscasting Future

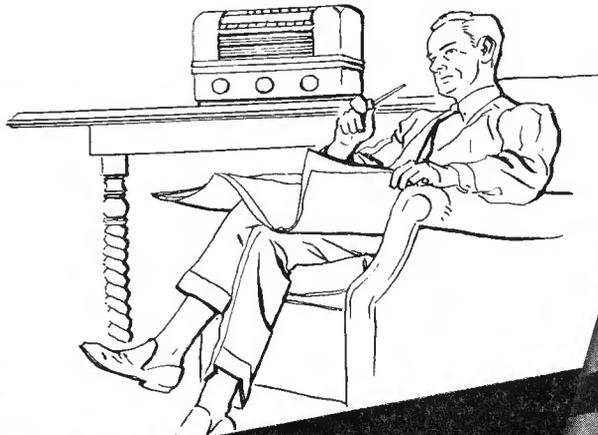
One of the highlights of a talk given by Will Baltin, program director of Du Mont television station, W2XWV, in New York City, to members of the American Television Society at a recent meeting in New York, was the prediction that television trucks of the future will rush to the scene of a big news event and be set into operation in about as much time as a newsreel unit.

Mr. Baltin explained that the camera equipment employed at the Du Mont station "is so compact and flexible that it could be wheeled out of the studio," and carried on a small delivery truck.

"Tremendous Market"

Stating that a television station can be operated very effectively with a small personnel, a modest studio and at an amazingly low cost, the program director predicted, "You'll see television stations mushroom across the nation, and radio dealers, who have experienced a business famine since the outbreak of the war, will find a tremendous market for the new marvel of the century."

The speaker also pointed out that television screens will no longer be limited in size, but that they will be of various sizes designed for homes and schools, placed on the market "at prices comparable to an average modest radio-phonograph combination."



Winning

THE WAR ... on the BATTLE FRONT and HOME FRONT alike



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.

• Our Army, Navy, Air Forces, function with clockwork precision, thanks to perfected radio coordination. Meanwhile, by spotting and ranging approaching aircraft even a hundred miles distant, regardless of weather, by night or by day, Radar eliminates another Pearl Harbor sneak attack. Lurking U-boats are losing their concealment. To cap it all, up-to-the-minute world news is available at the twist of a dial in millions of American homes whose radio sets keep functioning through proper servicing and replacement parts. We remain the best informed people. Our morale is unbeatable. Victory is in sight. Thus a truly radio war. Radio means capacitors. Capacitors spell Aerovox. Today, working at an all-time production peak in meeting military needs and civilian replacements, Aerovox contributes its full share towards winning the war on battle and home fronts alike.

• Consult our local jobber regarding your wartime capacitor needs. Ask for latest catalog; also free subscription to the Aerovox Research Worker. 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.



Serviceman in Electronics

• M. J. Edwards, of Radio Hospital, 2726 Coral St., Shreveport, La., not only finds time to make a hurry-up job of bringing "dead" radios to life, but to make important contributions to the electronic field as well.

Mr. Edwards' report of the situation is as follows:

"One important way the serviceman can help in the war effort, in addition to keeping radios alive, is to cooperate with the local civilian defense setup, for there are many devices used in that work that need to be built and maintained. Factories need anti-sabotage and intrusion alarms, and electronic control devices to help speed production. In fact, the electronic field is wide open, and in great need of both design and maintenance personnel. There is a postwar future in these devices for the radio serviceman who will take advantage of the present opportunity to familiarize himself with them.

"I have found the electronic and

Louisiana Dealer Advocates Field of Electronics as Lucrative Income Source for Servicemen

electrotherapeutic field a very interesting addition to my regular service work, and a profitable addition as well.

"Instead of only trying to invent devices that I think people should want, I merely take an existing problem that a company, doctor or a musician wants solved, then design and build a device to do the job."

"Hog-calling" by Hogs

People familiar with "hog-calling" methods will be surprised to note that Mr. Edwards reversed the procedure by practically making the hogs "call" the people. It amounts to something

like that, anyway. Mr. Edwards continues: "One of the most unusual requests I received was from the Louisiana State Exhibit Building. The request was for a set of automatic hog grunts and pig squeals, with a background of negro spirituals, all having invisible control so that they would operate whenever a visitor stopped in front of a 16 ft. long diorama picture depicting hogs and pigs in pens, with a background of negro workers digging sweet potatoes.

"I made a recording inside a pigpen on a negro sharecropper's farm, and by having a worker catch a pig and tie a rope to its hind leg, we got the pigs to grunt loudly, and at the same time negroes were singing spirituals. Then I developed a remote control capacity relay with voltage stabilization, with the pickup antenna inside the diorama case, operating a record player and amplifier underneath the case, giving the illusion of the sound actually coming from the diminutive

HELPING AMERICA MEASURE UP

★ We can feel sure that the men who fight our battles are fully equal to the mighty task that faces them. ★ But the planes, tanks, ships, and guns they fight with must measure up, too. That's our job—those of us at home. How much? . . . How good? . . . are questions that only our hard work can answer. ★ Electrical instruments are a small but extremely vital part of America's war machine. Here at Simpson we are making *all* we can, the *best* we can, as *fast* as we can.

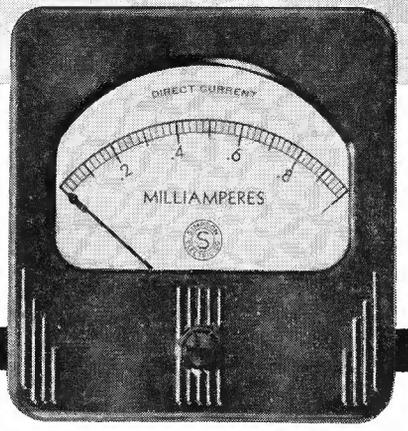
SIMPSON ELECTRIC COMPANY
5200-5218 W. Kinzie Street, Chicago, Illinois



Simpson

INSTRUMENTS THAT STAY ACCURATE

Buy War Bonds and Stamps for Victory





"Reception room" in Edwards' Radio Hospital. These sets have come to the repair shop via baby carriages, wheelbarrows, toy wagons, limousines and bicycles.

figures in the scene. And, as it is only operated at the approach of a person to the front of the figures, it heightened the illusion of the hogs grunting, because they then appeared to have been disturbed by the visitor.

"This display was on exhibit for three years, and was viewed by thousands of people, without a single one ever figuring out how it worked."

Mr. Edwards has developed geophysical equipment for oil companies, electronic tricks for Ripley shows at carnivals; electrotherapeutic devices (not on the market) for individual physicians and surgeons, with which they can do specific jobs more quickly and safely. Mr. Edwards has also originated trick and standard electronic musical instruments, intrusion alarms of all kinds; devices for the war effort and many control units. "Any alert radio serviceman, who will get his mind out of the rut, can do any of these jobs," says Edwards. "And, he can also visualize new tasks for the same old willing electrons to do."

"Bring 'Em Back Alive"

Frank Buck has nothing on Edwards of Radio Hospital. All the former does is to "bring 'em back alive," whereas Edwards gets the radios "dead," and the customers "bring 'em back alive." Commenting on the important phase of keeping sets playing, Mr. Edwards continues:

"In the March issue of RADIO RETAILING TODAY, I read an article called, Dead Receivers Are Piling Up, which had the same effect upon me as though it was titled Bodies of Soldiers Piled Up to Die because doctors are receiving medicine in blue containers instead of red ones. In Bataan, the Medical Corps ran out of quinine

early, but they did not throw all the malaria patients out to die. The doctors used every available substitute, and kept the patients alive.

"A radio is a living thing to me, made of but a slight rearrangement of the same protons, neutrons and electrons of which humans are created. Radios are now owned almost entirely by people who have sons, brothers, relatives and friends on the battlefronts. These people depend upon radio to bring them fresh news of the war; latest point values of food products, expiration dates of ration coupons and entertainment when in need of morale building cheer. Letting a faithful war worker like a radio die, merely because the same old remedy cannot be obtained in the same color packages, and under the same old name, is nothing short of the negligent murder of a good friend.

Substitutions Offered

"If one cannot get 50L6, 35Z5, 12SA7, 12SK7, 75, 80 or others without end that none of us are getting; so what? Use something else. Any tube manufacturer or distributor can readily supply any serviceman with a tube manual, and an intelligent perusal of the same will bring to light a myriad of tube types with similar characteristics, but with different bases, terminal arrangement, and probably different filament voltage.

"A change of socket, rearrangement of wiring, sometimes a change in bias; adding or subtracting series filament resistance, will do the trick. Use a bit of ingenuity and a little extra work, and another family can again keep in touch with current events because the set was not allowed to die.

"I have even replaced the 12 volt types with 1.4 volt battery types by

adding series resistance to the remainder of the 12 volt circuit to eliminate one tube from the string, and then obtaining the filament voltage for the 1.4 volt type through a series resistor from rectifier cathode. Works fine, too.

"By changing a series parallel circuit, one may mix the .15 and .3 ma. fil. tubes in a series string very successfully. If resistance cords are hard to get, use light bulbs. They are cheap and plentiful, and moving a decimal two places to the left of the wattage rating of the lamp, gives the correct current rating for the series string, within satisfactory tolerance limits. It is best to use two lamps of double the wattage rating in parallel. If the reasons for the changes are explained to the customer, he will be found grateful, and during the post-war period when the shops will really need business, the customer will still remember the place where a little extra trouble on the part of the serviceman kept his radio alive."

Many Changes Easily Made

"The 35Z5 tube may (with necessary circuit changes) be replaced very satisfactorily with the 35Z4, 35Z3, 117Z6, 117L7, 117N7, 25Z6, 25Z5, 12Z3, and in some cases by the 1V, and others. In substituting a .3A tube for a .15A tube it is simpler to change all tubes in the radio to .3A types, adding a series resistance, and saving the salvaged .15A types as used tubes to put another radio in condition to carry on its job.

"The 75 and similar types are the easiest problem of all to solve, as there are so many other available types in octal and loctal bases with exact or almost exact internal characteristics; merely needing a socket and wiring change. Or a tube of lower gain may be used by merely changing the load resistor.

"The 80 has many duplicates in the octal base line, and even a 6X5 may be used in most table models to replace a 5 volt rectifier, it, as well as the 84 and other similar 6 volt types (regardless of bases) work quite well on 5 volts, and last much longer.

"Most circuits in a radio may be altered to compensate for lack of parts. Transformer primaries, when open, may be shunted by a resistance, and the plate capacity coupled to the grid winding, without audible loss. Entire coils may be easily rewound by the exercise of a little care and patience. Where there is a shortage of magnet wire for the rewind job (as is the case in Shreveport), I have found that most doctors own one or more obsolete Tesla coil type diathermy machines, which may be obtained merely for hauling them off, and getting them out of the doctor's way. These devices contain enough enameled and cotton covered wire of all sizes to wind hundreds of radio transformers."

FADA Radio



Now — Fada Brings You Henry J. Taylor Over WJZ

As a public service to FADA owners, dealers and jobbers . . . as a service to all America . . . FADA brings you Henry J. Taylor five evenings each week over WJZ from 11:05 to 11:15 P.M.

Last American into Berlin . . . last American out of Germany before Pearl Harbor, Mr. Taylor is not only a successful industrialist . . . top-flight economist . . . famous war correspondent . . . world traveler . . . but author of current best-seller "Men in Motion."

Hard-headed, clear thinking comments are brought to you by one of the best informed men in America . . . completely personal and independent . . . his own views without restriction or censorship by FADA as his sponsor.

FADA takes pride in "going on the air" over one of America's leading stations . . . takes pride in bringing to you one of the clearest . . . most concise . . . hard hitting and direct interpreters of the news.

FADA brings you Henry J. Taylor purely as a public service . . . FADA has nothing to sell until the war is over. Today FADA men . . . machines . . . resources . . . priceless experience . . . are working 100% for victory for our Government and our Allies. When peace is won FADA will produce 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

Service Notes

Using what he calls "straight-from-the-shoulder" words, Mr. Edwards expresses the opinion that some radio repairmen won't find his article pleasant reading, but he says that it is time for the patriotic serviceman to change his way of thinking, and instead of "crying" about parts shortages and lack of duplicate replacement tubes, Mr. Edwards suggests: "Let's spend that energy working out substitute ways and means of keeping the radios alive, and burning a little extra midnight oil in anticipating probable local and national shortages, in order to have a substitute planned and ready before the customer arrives.

Call Quits to Crying

"I know it can be done, because we have the same shortages in Shreveport that exist in the rest of the country, and we too are in the center of an area containing a vast number of army camps, air fields, war plants and are in the army maneuver area, etc. We are faced with the same shortage of servicemen, yet not a single customer has brought us a radio that he did not have returned to him in perfect playing condition either the same day, or at most within 24 hours.

"In order to prevent work stacking up, we stay on the job long after the shop has been closed to customers, and we stay there until every radio received that day has been reconditioned. In this way we start the next day with no holdovers.

Customer Carries the Chassis

"We do no pickup or delivery. We merely explain to our customers that they will receive quicker service, and make it possible for us to recondition more radios for more people in the same amount of time, if they will bring in their own radio. We explain to them how to remove their radio chassis and speaker from the cabinet, and almost invariably their response over the telephone is, 'well, if that is what it takes to help do my part I will be glad to bring it in.'"

Edwards' Radio Hospital sees some unique methods of customer delivery. Sets are brought in on toy wagons, baby carriages, wheelbarrows, chauffeured limousines and bicycles. Commenting on the no-delivery, no-pick-up system, Mr. Edwards says, "the point I am trying to bring out is that the serviceman can save badly needed bench hours by discontinuing all pick up and delivery for the duration. It comes as a shock and surprise to some of the stuffed shirts and dowagers, but it is surprising how quickly they learn

to do things for themselves when they actually have to."

Urging expediency on the part of radio repairmen, Edwards continues: "I firmly believe that when a man hangs out a sign advertising Radio Service, he should give just that—not radio alibis. He should like radio better than any other thing, and like it well enough to spend many extra hours familiarizing himself with at least the fundamental laws and mathematics governing radionic phenomena. He should keep up to date on new developments, and he should go back 20 or 30 years or more and learn the old circuits that can be used to good advantage today.

"Above all the serviceman today should learn all the functions of and reasons for the various component parts of a radio, so that instead of constantly worrying about an exact replacement part or tube by its name or number, he will consider only its purpose and function, then use one of the many other methods of accomplishing the same ultimate result."

Golenpaul Likes New Limitation Order

Legislation that actually benefits radio consumer, serviceman and jobber, and shows that WPB is proving its intention of keeping American radio sets functioning, is the summation of Charley Golenpaul, comment-



Charles Golenpaul

ing on the recent WPB Limitation Order L-265. Mr. Golenpaul, who has worked closely with servicemen and jobbers throughout the country for the past two decades, says:

"Now for the first time the serviceman can really buy those replacements he needs in his work. Previous

restrictions are swept aside. By submitting the defective part he has removed from radio or similar assembly, or certifying that he needs the replacement, he can walk into his jobber and get that requirement part. Meanwhile, the jobber in turn should have no hesitancy in giving that part to the serviceman since the jobber can replace his stock on this same part-for-part basis.

"I like this new Limitation Order L-265. It's simple. It reduces paper work to a minimum. And yet it safeguards the use of our strategic materials as it should. The serviceman merely collects that part which he is replacing—or gets a certificate when he sells the customer. He does not have to pass the defective part on to the jobber. He must simply certify that he has collected the components in kind, or corresponding certificates. He must keep a record of the parts or certificates, and this record must balance with his purchases. The junked parts are turned in at scrap or salvage stations within 60 days of their collection.

Wartime Servicing

"This new order should work wonders in wartime servicing. Until now, unfortunately, many jobbers have held up on the release of their merchandise. They have held out for better odds, working under the false impression that they could not replace their stock, although they could have replaced whatever they sold by filing the PD-1X form. However, the present part-for-part routine now clears up all doubts as to stock replenishment within the production scope of the manufacturers.

"The serviceman did not have to flash a priority in order to buy replacement parts prior to L-265. The jobber did have to furnish a priority which he obtained through the PD-1X. The difference now with L-265 is that the jobber can display his merchandise and make every effort to sell it, whereas before he doled out his precious stock only to pet accounts. The result was that some servicemen were out of luck. And millions of receivers were silent for want of proper repairs.

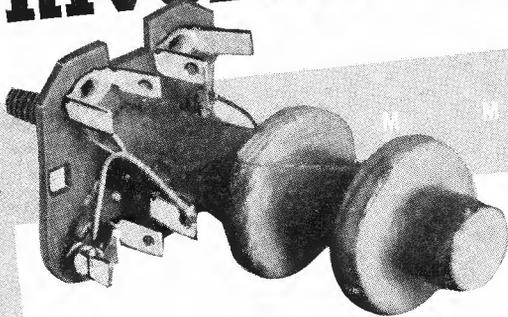
"The WPB is certainly proving its intention of keeping American radio sets functioning, to the end that the American people can be kept informed and guided and encouraged at every stage in the winning of the war."

Ex-Radio Repairman Wins War Work Award

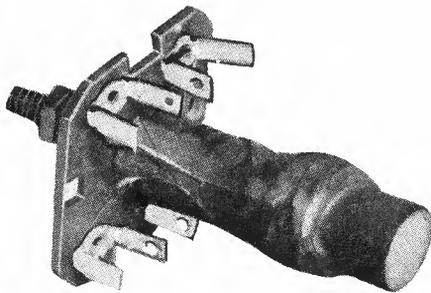
While most radio servicemen contribute their wartime skill and ingenuity to the maintenance of home sets, others take defense jobs in their areas and very often distinguish themselves in war production work.

Lawrence Handler, former radio repairman and "ham," who took a war

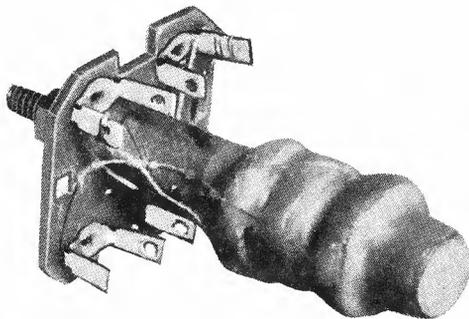
Replace with Meissner Universal Adjustable Coils!



Adjustable R.F. Coil



Adjustable Oscillator Coil



Adjustable Antenna Coil

MISSNER Adjustable Inductance Ferrocart (iron ore) coils are designed to replace the Broadcast band coils in practically any receiver. When an antenna, R.F. or Oscillator coil requires replacement use a Meissner Universal Adjustable Coil.

Universal Adjustable Coils are continuously variable in inductance over a wide range, the coils will accurately "track" with the other coils in the receiver when properly adjusted. The exact inductance of the old coil is easily matched by a very simple adjustment regardless of the value of the tuning condenser.

Universal Adjustable Coils are available at your MEISSNER distributor.

 **Meissner**
MT. CARMEL, ILLINOIS

"PRECISION-BUILT ELECTRONIC PRODUCTS"

position 7 months ago, recently received a substantial suggestion award from the Westinghouse Lamp Division, Bloomfield, N. J.

Handler's idea to change the design of a machine tool fixture has resulted in an average daily saving of 9 production hours, and the saving of critical materials by preventing tube breakage. The award the former repairman, who is now a maintenance foreman, received was a check for \$541.50 and a \$50 war bond for the "best suggestion of the month." He also received a WPB merit award.

The fixture is essentially a collar-like device which fits over the end of the tube mechanism for the purpose of holding it in place while the glass bulb is sealed around it. Formerly it was necessary to hammer it back to its original position each time the "collar" was released, thus sometimes resulting in damaging the fixture and cracking the tube glass.

Handler, who had been searching for some way to avoid this damage, hit upon the idea of installing three metal "jaws" on the fixture which would pull the collar back to its



Lawrence Handler

original position and eliminate the necessity of hammering. He also arrived at the conclusion that if ball bearings were installed on the fixture, it would eliminate the motion caused by friction when the collar was released. This motion had been another frequent cause of injury to the radio tubes.

"Swaps" Ruling Explained by WPB

Questions relating to "swaps" of inventories between merchants, and other problems arising from operation of Consumer Goods Inventory Limitation Order L-219, are dealt with in the first official interpretation of this order issued by WPB.

Among the questions and answers listed are the following:

(a) *Question:* If a merchant "swaps" merchandise with another merchant, is the one who transfers more goods than he receives allowed to consider the difference in amount involved in the exchange as an addition to his sales?

Answer: No. Exchanges between merchants are not to be considered as sales for the purposes of Order L-219. They are generally treated in all computations under Order L-219 in the manner usually employed when a return of goods is made to a vendor or merchandise supplier.

(b) *Question:* If a "swap" of goods is not considered a sale, how should a merchant treat such transactions in his computations under Order L-219?

Answer: (1) If the "swap" involves an even exchange, there is no addition to, or subtraction from, his inventory, sales or receipts for the purposes of Order L-219.

(2) If there is a difference in the dollar value of goods exchanged, the difference in dollars cannot be treated as a sale by the merchant who transfers goods of greater value than those which he receives in exchange.

NOW I CAN CALL ANYONE INSTANTLY - ANYWHERE IN THE PLANT!

BELL VOICE PAGING and broadcasting SYSTEM

Voice paging will get better results in your plant, too. It will enable you to locate individuals in the quickest possible time... helping to avoid switchboard tie-ups. And in addition the new Bell Industrial Voice Paging Equipment provides for plant-wide broadcasting of musical recordings, announcements, instructions and time or alarm signals. Its widely adjustable, precision-built, standard units—specially designed for industrial use—can be grouped to fit any need. Also designed for quick, easy expansion or rearrangement. Get details on this new BELL Industrial Sound Equipment.

Write Today for Details

BELL SOUND SYSTEMS, INC.
1184 ESSEX AVE., COLUMBUS, OHIO
EXPORT OFFICE: 5716 Euclid Ave., Cleveland, Ohio

THIS AD CREATES PROSPECTS

Get into the lead NOW — with BELL — in offering Industry this advanced equipment for voice paging and inter-plant broadcasting of music and announcements! The ad above is one of a series in current business and industrial publications announcing the new BELL Industrial Voice Paging System, designed ESPECIALLY for Industry's present-day needs — the first GENUINE INDUSTRIAL system of its kind!

THIS BULLETIN GIVES YOU THE SELLING DETAILS



BELL SOUND SYSTEMS, INC.
1186 ESSEX AVE., COLUMBUS, OHIO
Export Office: 5716 Euclid Avenue, Cleveland, Ohio

LETHAL WEAPON

IN THE WAR ON U-BOATS



THE NEW SCIENCE OF ELECTRONICS

has profoundly changed the art of war. On land, in the air, above and below the surface of the sea, our forces fight today with electronic weapons of incredible power, speed, precision. It is satisfying to the men of Radio to know that these weapons have proved so successful on every battlefield where our boys, planes, tanks and ships have come to grips with the enemy.

The revelations concerning RADAR and its part in the war came as no surprise to those whose job is to supply our fighting forces with modern electronic equipment. Since before Pearl Harbor these Americans have been working shoulder to shoulder with our armed forces in applying the power of electronics to the art of war. Out of this united effort have come fighting weapons never before known—on land, at sea or in the air. In

this pioneering work it has been National Union's privilege to play a progressively increasing part. A greater National Union has been built to cope with vastly larger responsibilities in the coming "Age of Electronics". To service engineers this is assurance of even greater cooperation—more complete merchandising help—than ever before. National Union with its unequalled record of assistance to servicemen, can and will see to *that!*

NATIONAL UNION RADIO CORPORATION • NEWARK, N. J. • LANSDALE, PA.

NATIONAL UNION RADIO AND ELECTRONIC TUBES

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



ROLLING ON TO

Victory

★ Clarostat continues to be engaged 100% in the most important job of all—winning the war—on land, sea and in the air.

But after victory has been won, Clarostat promises the trade—servicemen, jobbers and others—that Clarostat products for initial and replacement uses alike, will once more be generally available for peacetime pursuits. Meanwhile, let's keep 'em rolling!



CLAROSTAT Controls and Resistors
 CLAROSTAT MFG. CO., Inc. · 285-7 N. 6th St., Brooklyn, N. Y.

Lee Robinson Back with "Radio Retailing Today"



Lee Robinson

Lee Robinson, for over 25 years associated with radio and music-trade publications in executive positions, has severed all connections with Radio Magazines, Inc., of which he was president, and has rejoined Caldwell-Clements, Inc., 480 Lexington Avenue, New York, as eastern manager of Radio Retailing Today.

Thomas In IRC Production Post

Leslie G. Thomas, formerly works manager of International Resistance Co., Philadelphia, Pa., has been elected vice president in charge of production, the company has announced.

One of the pioneer production men in radio manufacturing, Mr. Thomas, has been associated with the industry since the early 1920's, and is well known in the field.

IRC, having won the Army-Navy award last September, recently received the added star for maintaining its production record.

GE Expands Radio News Service

General Electric Co. announces that it has expanded its radio news service from three to six nights a week, and has increased the number of stations on the Columbia Broadcasting System carrying this news program from 60 to 117, when it commenced sponsoring the 10-minute news program. "The World Today," 6:45-6:55 p.m. EWT, on May 31st.

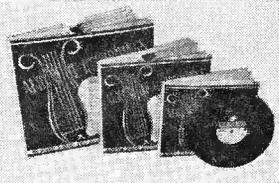
The new program takes the place of the former news program sponsored by GE, and carried at 6 p.m., EWT, for over a year on CBS.

WE HAVE IT!

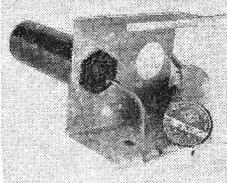
IMMEDIATE DELIVERY
We have all these items
in stock—But Order Early



Chemical Laboratory
20 different bottles of most frequently used radio cements, scratch-removers, thinners, etc. **STEEL RACK INCLUDED FREE...\$4.90**



Howard Recording Blanks
6 1/2" -Album of 6\$.45
8" -Album of 678
10" -Album of 6 1.17



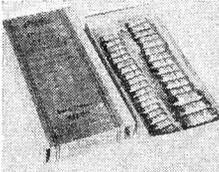
Upright Mounting Condensers
8 mfd 450v.....\$.72
8-8 mfd 450v..... 1.10
16 mfd 450v..... 1.05
20 mfd 450v..... 1.17
30 mfd 450v..... 1.35

CONDENSERS

8 mfd 450v Tub\$.32
16 mfd 150v Tub30
30 mfd 150v Tub35
20-20 mfd 150v59
20-20 mfd 250v, 20 mfd 25v79
50-30 mfd 350w.v. Upright Mtg. .98
Aerovox 8-8 mfd 450v Tub76
Aerovox 8 mfd 450v Tub44
Aerovox 8 mfd 450v Carton Type .67
.5 mfd Generator Condenser, each .25
25 for \$3.95, 100 for \$14.95
.01 mfd 400v, package of 50 2.75
.05 mfd 400v, package of 50 3.00
.02 mfd 600v, package of 50 3.25
.02-400v...\$.07 .01-600v... .08
.02-600v... .08 .05-600v... .08
.1-600v... .12 .5-600v... .24

VOLUME CONTROLS

1 Meg with switch, short milled shaft\$.50
1/2 Meg tapped with switch50
1 Meg tapped with switch50
2 Meg tapped with switch50



Sprague Condenser Kit
Contains these 600 Volt By-pass Condensers:
(2) .001 (5) .01 (8) .1
(3) .002 (5) .02 (2) .25
(3) .005 (4) .05 (1) .5
Complete \$4.20



Aerovox Motor Starting Condensers
86-96 mfd 1 3/4" dia. x 3 1/4", \$1.48
108-120 mfd 1 3/8" dia. x 3 1/4", \$1.53
124-138 mfd 1 3/8" dia. x 3 1/4", \$1.63



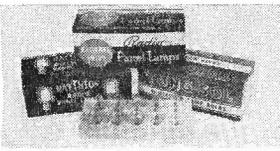
Miracle Point-Needles
Plays 2000 records. List, \$1 ea. Ea. 39c, 25 for \$9 100 for \$27.50



AC Plugs and Cube Taps
Spring action blades. Packed 25 in a display box. Choice of either display\$1.65



Telegraph Keys
Sturdy key, mounted on bakelite base, complete with switch, each\$2.98



Radio Panel Lamps
Type Volt Base Box of 10
No. 40 6v Screw\$.49
No. 44 6v Bayonet49
No. 46 6v Screw49
No. 47 6v Bayonet49



Telegraph Sets
Each set consists of key, blinker, sounder and buzzer. Attractive housing. Set of 2\$2.38

Send for price sheets for items not listed in this ad.
TERMS—net cash with order or 20% with C.O.D. orders.

Include L-265 certification with order

Serviceman Adopts New Delivery Rules

Irving P. Horowitz of Sutter Radio Service, 118 Sutter Ave., Brooklyn, N. Y., took immediate action following the ODT order banning the retail delivery of radio sets, and has drawn up a set of rules to be displayed in his shop. He states that he will operate under these rules, unless some new status of the order affecting radio delivery is brought about. The rules follow:

Due to the ODT regulations and the gasoline shortage, it is necessary to institute the following policies and regulations:

1. If you have a radio at home that is in good working condition, we will be unable to take another set to our shop for repair.
2. Absolutely no deliveries on new or used radios.
3. All midjets and table model radios must be transported to and from the shop by the customer.
4. Pickups and deliveries will be made by specific appointment only, and only one attempt will be made to pick up or deliver. You will be notified 24 hours in advance of delivery, by postal card. Call us if you can't keep the appointment. Our boys are giving their all. No sacrifice is too much to achieve total victory. Thank you for your past cooperation and for the cooperation we feel sure you will give us in the future.

Speaks as Raid Warden

Mr. Horowitz, stating that he serves as an air raid warden, and works during the day in a defense works, with Mrs. Horowitz operating the radio store in his absence, said that he considered the order highly contradictory.

He pointed out that civilian defense rules definitely request citizens to use their home receiving sets in conjunction with defense rules, and also that the essentiality of radio in the home has been thoroughly established as a distinct necessity to the war effort.

Don Burcham to Represent Standard

Effective the first of this month, Don H. Burcham, 917 S.W. Oak St., Portland, Ore., became jobber and industrial sales representative for Standard Transformer Corp., Chicago, in the states of Idaho, Montana, Oregon and Washington.

RADIO WAREHOUSE MARKET

362-B WOOSTER AVE. AKRON, OHIO

Radar...

—Who really invented it?

To begin with, Radar is not an "invention" in the old-fashioned sense, at all.

This sensational weapon, which gives the direction, speed and altitude of Axis planes before they are visible through the most powerful telescope . . . which determines the exact position of Jap battleships even in fog, smoke or the blackness of midnight . . . and which helps direct deadly missiles of destruction at the unseen adversary, is the outgrowth of many skills, many fine minds.

If credit must be given, perhaps it should go chiefly to James Clerk Maxwell, or Heinrich Hertz, or Guglielmo Marconi, or any of the famous early pioneers of radio waves.

But from the modern perspective, we like to think of Radar as a joint contribution of British and American scientists, a triumph of United Nations' collaboration in winning the war.

And if individuals are to be mentioned, our scientific "Congressional Medal of Honor" would be awarded to the distinguished scientists and technicians of the United States Navy and the United States Army, who have contributed immeasurably to Radar's development.

A NUMBER of commercial concerns are currently manufacturing Radar equipment for the Armed Forces, but to RCA, a prime supplier, Radar is not an emergency device born in the stress of war. As the engineering organization perhaps most closely associated with the modern development of this history-making device, we take pride in presenting the following facts:

RCA began its basic research work on the tracking of

objects by radio waves (the basic principle of Radar) in 1932.

Development apparatus was under experimental test in the summer of 1934, at which time demonstrations were given.

With this experience as background, RCA began preliminary negotiations with the Navy for the manufacture of commercial type Radar equipment.

In October, 1939, contracts, on a bid basis, were awarded the Radio Corporation of America for manufacture of Radar equipment patterned after the original model which had been built at the Naval Research Laboratory and installed in the U.S.S. NEW YORK.

RADAR AND THE FUTURE

Radar is the outgrowth of wide radio experience on the part of many organizations and individuals.

Radar is only one instance of the sensational part radio and associated electronic devices are playing in this war.

When the production of commercial products after the war is resumed, experience in all the manifold

branches of radio will count for more than ever.

RCA, as the foremost radio organization, has more experience—in more branches of radio and electronics than any other company.

Remember this in your post-war thinking about radios, phonographs and television . . . Today, let's win the war. Buy Bonds.

**First deliveries of Radar were made by RCA
more than eighteen months before Pearl Harbor!**

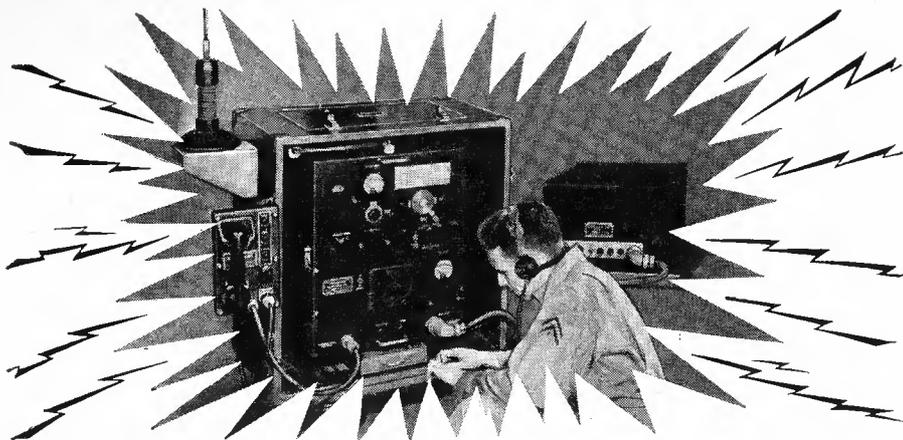


RCA VICTOR DIVISION

Radio Corporation of America

CAMDEN, NEW JERSEY





At the **NERVE-CENTER** of Modern Warfare

It's a new kind of war made possible by electronic miracles . . . and the fate of many men in our armed forces hangs on Sentinel-made Communications equipment in the thick of the battle on every front. Never before has Sentinel Quality been so supremely tested. It is being war-tested for multiple peacetime uses in the world of the future.

SENTINEL RADIO CORPORATION
2020 Ridge Avenue, Evanston, Illinois

Quality
Since 1920

Sentinel RADIO

Paul E. Southard New Columbia Sales Head

Paul E. Southard, one of the best known men in the record business, and under whose management Columbia Recording Corporation's sales have increased twelve times in five years, has been elected vice president in charge of sales.



Paul E. Southard

Coming to Columbia in 1939, he was assigned the job of making "something out of nothing," for at that time Columbia had practically no sales organization, and a limited catalog. Mr. Southard, who had been with the old Aeolian Piano Co., Brunswick-Balke Callender, and with Victor, organized the distributor-dealer organization now in operation.

In addition to his sales organization work, Mr. Southard has been in charge of order service and inventory control operations at Columbia.

No Radical Changes Says Westinghouse

In an open letter to 32,000 electrical dealers throughout the nation, T. J. Newcomb, sales manager of Westinghouse Electric Appliance Division, Mansfield, O., says that the company has adopted a postwar policy "with both feet on the ground," and that "our postwar planning in the interests of consumers and dealers covers two stages. First, when the war is over we plan to get into production fast on essentially those products you sold just before the war. We shall improve them but won't experiment with radical changes."

The second phase, the Westinghouse executive explained, is to "bring along the revolutionary new developments as quickly as they can be proved."

TRIPLITT *Combat Line* TESTERS



TRIPLITT MODEL 625 T PORTABLE TESTER

A long scale 4.58 highly sensitive, compact, easily portable Tester.

12 A.C.-D.C. Voltage Ranges to 5,000 Volts.

Six Direct Current Ranges including microamperes, milliamperes and amperes.

3 Resistance Ranges to 4 megohms.

Bakelite Case 6" x 5½" x 2½"



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

TRIPLITT ELECTRICAL INSTRUMENT CO. • BLUFFTON, OHIO

Clarify Overtime Repair Charges

When an appliance repair shop specifically offers to do a repair job in overtime hours, the customer requests such a special service, and the work is actually done during overtime hours by mechanics who are paid time and a half, the Repair Shop may in most cases charge one and one-half times its regular customers' hourly rate, the Office of Price Administration has announced.

This interpretation applies where the seller in March, 1942, the base period under the services regulation (Maximum Price Regulation No. 165), actually made an extra charge for overtime labor or where he did not regularly supply any overtime labor as such in March. In the first case, the repair shop has its overtime charge in March as a ceiling price. In the second case, where no overtime was regularly supplied in March, the special overtime service now becomes a new or different service, and the maximum price for it is determined either by the nearest competitor's charges or by the use of the regular percentage margin mark-up formula provided by the regulation.

The only case in which the special charge cannot be made is where the repair shop regularly worked overtime in March without making any distinction in its charges for regular hours and overtime hours.

In all cases, overtime work at an extra charge must be specifically authorized by the customer, and the extra charge cannot be made merely because employees are worked overtime to finish a job which the customer intended to have completed within regular shop hours.

Music Merchants To Hold Meeting

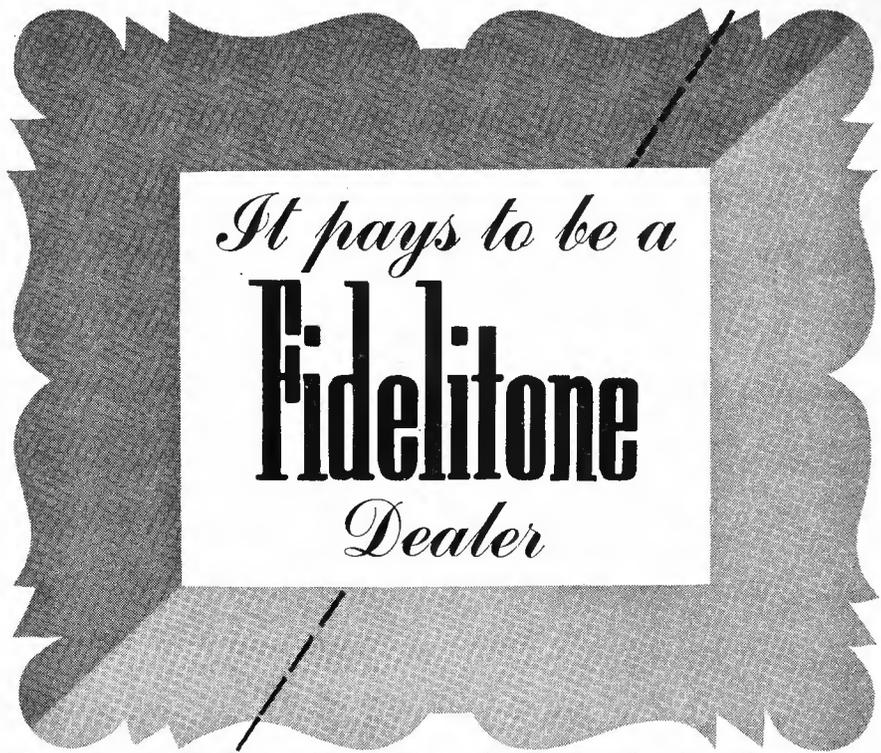
The 1943 war conference and educational exhibit of the National Association of Music Merchants, Inc., will be held Aug. 9th and 10th, at the Hotel New Yorker in New York. This will be the 42nd annual meeting of the organization and music merchants from all over the country will attend. Exhibits will be housed in 73 booths.

Harry D. Griffith, vice-president of Griffith Piano Co., Newark, N. J., is president of the Association.

Dressel is Promoted

The Stackpole Carbon Co., of St. Mary's, Pa., had announced the appointment of Henry Dressel as its supervisor of electronic components engineering.

Mr. Dressel, who formerly was associated with the Oak Mfg. Co., of Chicago, has been a member of the engineering staff of Stackpole for several years.



There are more Fidelitone phonograph needles in use today than all other long life needles combined. Phonograph owners have voted Fidelitone their favorite needle by their purchases. The Fidelitone Line is easy to sell because Fidelitone needles are half sold when dealers get them. Every Fidelitone dealer is backed by constant national advertising, free literature, attractive window and counter displays, and many other sales helps.



FIDELITONE DE LUXE FLOATING POINT ... the needle with the famous Permometal Tip, an alloy four times as costly as gold. Kind to records. 5000 plays. Floating point construction filters record scratch. Cat. No. 100.

FIDELITONE FLOATING POINT ... a needle patterned after the Fidelitone De Luxe but with a less costly alloy tip. Will play up to 1000 sides of standard records. Floating point construction to filter record scratch.



Cat. No. 5024



PERMO RECORDING STYLUS ... a professional type recording stylus of superior quality. More than 400 six-inch recordings from one stylus. For better recordings.

DE LUXE FIDELITONE LONG LIFE ... specially designed for playing back home recordings. A flat area on the shank permits removal and proper reinsertion. Will reproduce over 4000 home recording discs.



Cat. No. 25

PERMO PRODUCTS CORPORATION 6415 Ravenswood Ave., Chicago

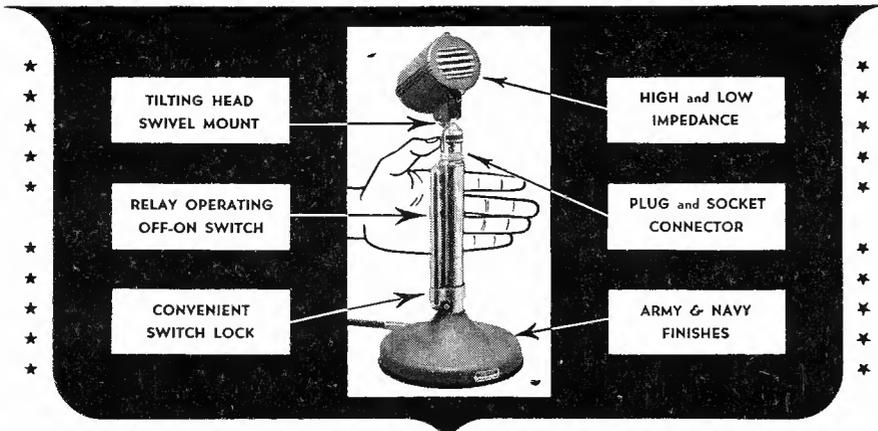
STANCOR TRANSFORMERS

USED BY MOST SERVICEMEN . . . MOST!



STANDARD TRANSFORMER

• CORPORATION •
1500 NORTH HALSTED STREET . . . CHICAGO



IN ACTIVE SERVICE



BUY WAR BONDS!

ASTATIC

IN CANADA:
CANADIAN ASTATIC, LTD.
TORONTO, ONTARIO

THE ASTATIC CORPORATION
YOUNGSTOWN, OHIO

● The traditional quality and performance of Astatic products is reflected in Astatic's GDN Series Dynamic Microphones now contributing to the high efficiency of radio communications in many branches of the service. Unaffected by wide variations in temperature. Available in high and low impedance models of 50 to 50,000 ohms. Includes relay operating OFF-ON Switch for remote control of transmitters and amplifiers. Designed with tilting head and interchangeable plug and socket connector. Sturdy and dependable.

RADIO MEETINGS HELD IN CHICAGO

The radio industry was joined by many important government officials in discussing the immediate military radio program, as well as future radio problems and development, at the Radio Manufacturers Association war production conference held June 10th, at the Palmer House, Chicago.

President Galvin gave an annual message on the "all-out" war effort and war production problems in the industry, and the annual financial report was given by the treasurer, Leslie F. Muter.

New officers and directors were elected at various business sessions, which included two meetings of RMA's board of directors, and its set, tube, transmitter, parts and amplifier and sound equipment divisions.

Among those who attended were James L. Fly, chairman of the Federal Communications Commission; Director Ray C. Ellis, of the Radio and Radar Division of WPB; 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, in charge of exports under the WPB Radio and Radar.

No NEDA Convention

At the request of ODT, the National Electronic Distributors Association did not hold a national convention this year, but held only board of directors meetings at the Palmer House, Chicago, June 8th to 10th, where election of officers was held, and matters of policy for the coming year were discussed.

Despite the fact that the meeting was held for "directors only," a number of NEDA members attended a general meeting open to all members on June 9th. Frank McIntosh of the WPB Radio and Radar Division, as well as other prominent government and industry officials, attended.

The Association of Electronic Parts and Equipment Manufacturers (formerly the Sales Managers Club, Western Group) held a joint annual meeting with the Sales Managers Club, Eastern Group, at the Palmer House, Chicago, on June 10th. J. J. Kahn of Stancor is chairman of the former group, and Charles Golenpaul of Aerovox Corp., chairman of the Eastern Group.



"Stan" Almas

238% INCREASE
WITH

AMPLICALL

INTERCOMMUNICATION & PAGING SYSTEMS

"Stan" Almas of the K. L. A. Distributing Co., Detroit, Michigan, a typical Rauland jobber "go-getter", reports a 238% sales increase for the last 12 month period! National advertising plus built-in quality is increasing AMPLICALL's popularity among the nation's war plants . . . helping all Rauland distributors set new sales records now as well as to effect excellent contacts for future business. Details of the successful Rauland FB Distributing plan will be supplied upon request. Write for it today.

THE RAULAND CORPORATION

(Rauland-Webster Sound Division)

4245 North Knox Avenue • Chicago, Illinois

Electroneering is our business



RADIO . . . SOUND . . . COMMUNICATIONS



Rauland Industrial Sound Units

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.

Is There a Black Market in Tubes & Batteries?

Editor, Radio Retailing Today:

In your May issue, the letter, "Says Black Market in Operation," and signed by "South Carolina Reader," prompts me to write the following answer:

The writer, as a manufacturer's representative, has neither batteries nor radio replacement tubes to sell, and is strictly a neutral party, interested only in seeing that dealers do have the facts.

If the South Carolina dealer could have traveled around these six southeastern states during the past six months, and while calling on radio parts distributors, seen exactly what deliveries these suppliers of his, and other radio servicemen, obtained on both batteries and tubes from the manufacturers, he would know exactly why he received so little of this material. There was no "black market." It takes supplies to create that, and the supply was not there. Manufacturers of these standard branded units have been under a definite, limited allocation, as far as civilian supplies are concerned. Some relief is expected, but, do not expect a plentiful supply, as our armed forces require the majority of this production first.

Unbranded goods, at above ceiling prices, will, of course be found, but on tubes and any batteries, our war economy certainly is the cause, and not a "black market" or even an underground one, as some folks classify it.

A "Dixie" Representative

Atlanta, Georgia

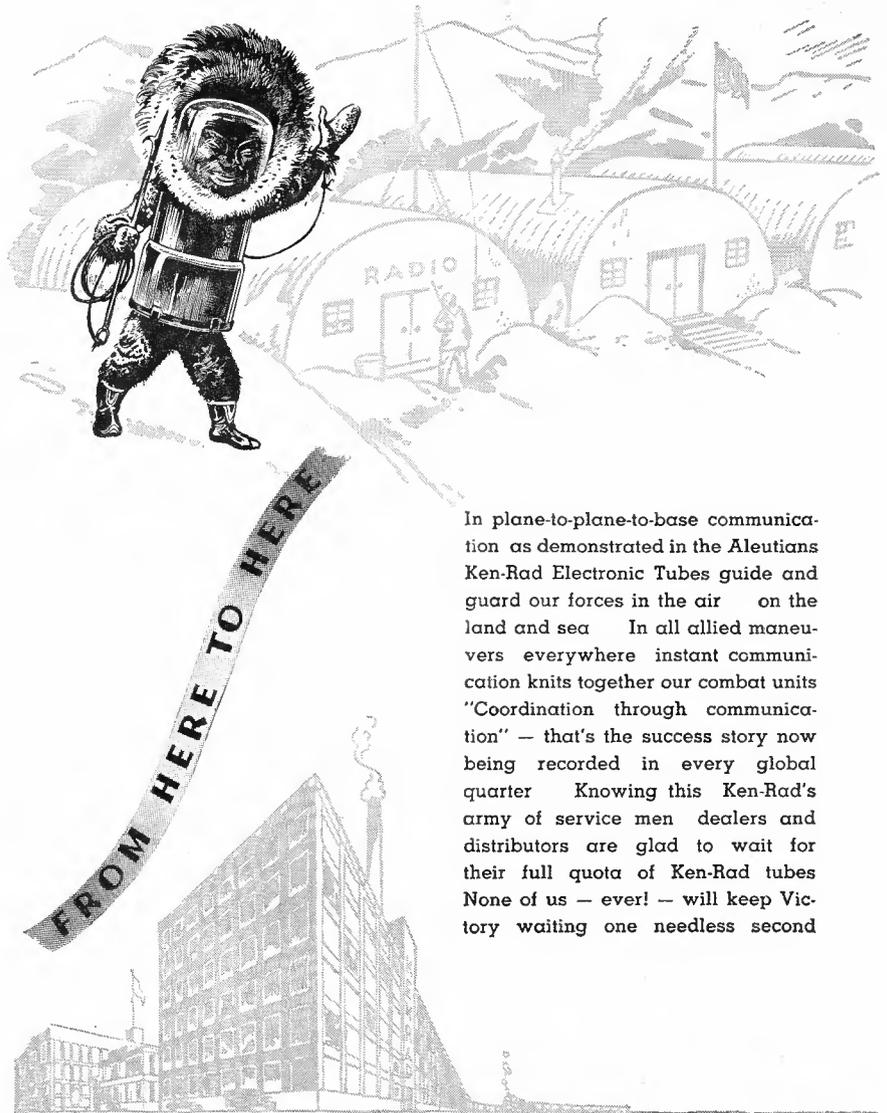
White Star For Stewart-Warner

One of the first Chicago manufacturers of war materiel to receive the Army-Navy "E" flag, Stewart-Warner Corp., recently received the award the second time for "meritorious services on the production front." In conformance with a War Department request, no official ceremony was held.

The company has been engaged in full war production for more than a year, and is one of the largest manufacturers of shell fuzes.

New California Reps Named

At their monthly meeting, the members of the California Chapter of the Representatives elected two new members to their group, E. C. Nickerson and Dan Rudat. Les Logan was elected secretary-treasurer in place of Arnold Sinai who is on leave serving Uncle Sam. Russ Hines continues as president of the chapter.



In plane-to-plane-to-base communication as demonstrated in the Aleutians Ken-Rad Electronic Tubes guide and guard our forces in the air on the land and sea. In all allied maneuvers everywhere instant communication knits together our combat units "Coordination through communication" — that's the success story now being recorded in every global quarter. Knowing this Ken-Rad's army of service men, dealers and distributors are glad to wait for their full quota of Ken-Rad tubes. None of us — ever! — will keep Victory waiting one needless second.

KEN-RAD

RADIO TUBES • INCANDESCENT LAMPS • TRANSMITTING TUBES

OWENSBORO • KENTUCKY

VACO Amberyl Handle

SHOCK PROOF **SCREW DRIVERS** **BREAK PROOF**

For Signal Corps trainees . . . for a host of other activities in the war effort, Vaco is supplying screw drivers and small tools designed for efficiency, and to speed up work in the radio and electronic field. Over 173 sizes and types. Write for catalog.

Vaco's ability to create special drivers and small tools is aptly illustrated in the panel at left, showing some of our unusual developments.

VACO
Products Company
317 E. ONTARIO ST.
CHICAGO, ILL.



Parts by Centralab

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

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

"Records for Our Fighting Men" Start 2nd Drive

Estimating that there are still approximately 200,000,000 broken or unwanted discs gathering dust in the nation's attics and storerooms, Records for Our Fighting Men, Inc., will start its second nationwide door-to-door drive for record scrap July 3, to continue to July 31.

Composed of the country's leading musical artists, the organization is a non-profit outfit, uses the funds from the sale of the donated scrap for the purchase of hundreds of thousands of newly released recordings for distribution to our fighting forces here and overseas. In keeping with the expansion of our armed forces, the drive has the recognition of the War Relief Control Board.

The collecting of scrap will be handled, as last summer, by over a million members of the American Legion and American Legion Auxiliary, and assisted by other patriotic volunteer groups. Result of last year's drive was 300,000 new popular and classical discs for our armed personnel.

Lack Becomes Western Electric Vice President

At the regular May meeting of the board of directors of the Western Electric Co., Frederick R. Lack was elected a vice president. Mr. Lack, who resigned as an officer of Western Electric last year to become director of the Army and Navy Electronics Procurement Agency, with offices in Washington, will now resume the direction of Western Electric's radio division in New York.

Mr. Lack's Washington assignment marked the second occasion of such government service during his 31 years with the company. During World War I, he enlisted in the U. S. Signal Corps and saw action in France.

Krich a Captain

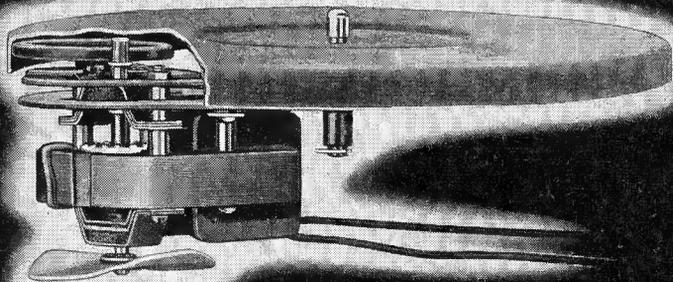
Barney Gordon Krich, secretary of Krich-Radisco, Inc., New Jersey distributors for RCA Victor, Kelvinator, Bendix and other manufacturers of home appliances, was recently promoted to a captaincy in the U. S. Army. Inducted in January, 1941, he rose rapidly in the ranks, and was commissioned a 2nd. lieutenant July, 1942, after attending an officers' training school.

Goldman Is Sales Manager

Joseph Strauss Co., Inc., Buffalo, N. Y., has announced the appointment of Meyer Goldman as sales manager.

Mr. Goldman has been associated with the Strauss Co. in various phases of sales work for the past 16 years.

remember ALLIANCE Phono-motors?



Let's Swing

Hitler and his gang from a sour apple tree! . . . we're doing our part by putting Alliance dependability and

skill into Dynamotors and other types of precision motors for our flying fighters. Alliance is serving on all fighting fronts. After we Win, and when joy again is unconfined, we'll tell you about some new and startling ideas in Phono-motors — Ideas that will help you in Peace as you are now helping in War. Why not put that in your notebook now? . . . under A.

REMEMBER ALLIANCE! . . . Your Ally in War as in Peace!

ALLIANCE MANUFACTURING COMPANY
ALLIANCE, OHIO

No "Dream Models" Says Crosley Official

"Don't expect radio manufacturers to be turning out 'dream models' of the ultra-modern radio receivers you may have seen pictured, as soon as the war is over," warned R. C. Cosgrove, vice-president and general manager, manufacturing division, The Crosley Corporation.

"Eventually, we will be having home radio receivers and other peace-time appliances such as had not even been thought of before the war, but not immediately," Mr. Cosgrove said.

"Some people feel that we may be making some civilian radio sets within a year from now. The government has under consideration making available some materials for development purposes on peace-time radio receivers and other household appliances next fall.

"Within four to five months after we have been told that we may make home radio sets, we can be making them—the same kind of radio receivers we were making when civilian production stopped, with some improvements.

Ready To Go

"Within six months after we get permission to go ahead, we can be making domestic refrigerators. This doesn't mean the creations in plastic that have been pictured, but the 1942 refrigerators with some improvements."

Mr. Cosgrove pointed out that the radio industry's volume before the war was \$325,000,000 while, last year, it turned out a total volume of war radios amounting to \$1,200,000,000.

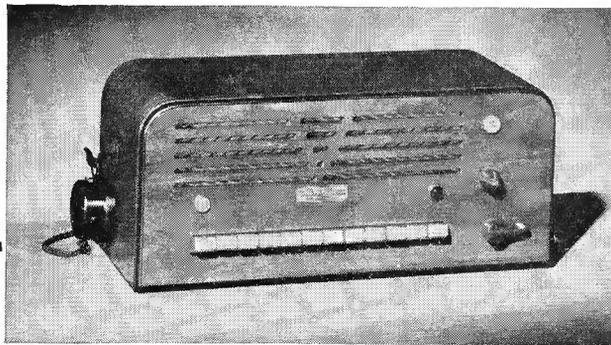
"Just after the war ends," Mr. Cosgrove asserted, "there will be a huge pent-up demand for goods and there will be war savings with which to buy them. After that, sales will not come so easily and they will require a lot of hard digging."

"If the intensity of the war lessens gradually, as many expect, we should be able to go back into civilian production by easy stages and thus hold up our personnel satisfactorily. Then we should go into rapidly accentuated yearly changes and improvements in products, but don't expect too great changes too soon after the war has ended."

Barney Ross Visits Shure Bros. Plant

Sgt. Barney Ross, accompanied by Lieut. M. F. Lanphar, incentive officer of the Navy, was a recent visitor at the Shure Bros. plant in Chicago, where microphones and acoustic devices are designed and manufactured.

In a talk before hundreds of Shure workers, Sgt. Ross told some of his experiences on Guadalcanal, and stressed the importance of microphones to the armed forces, citing many instances of their use in actual combat.

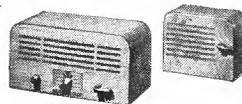


Talk-A-Phone

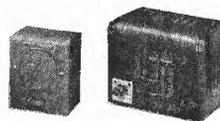
The Complete Jobber Line

Get the selling advantage of the most complete line of inter-communication systems in America. Five different systems, each available in three distinct types, offer a wide range of design and performance. There's a Talk-A-Phone to meet every price and engineering requirement. Attractive merchandising display and selling aids offered free to jobbers.

Write for details.



Talk-A-Phone
DeLuxe Systems



Talk-A-Phone
Standard Systems

Talk-A-Phone Mfg. Co.

Dept. RR., 1219 W. Van Buren St., Chicago, Ill.



A lifetime of
"KNOW-HOW"
has made Thordarson
the LEADER!

It takes more than mere "book learning" more even, than an "all out" determination to succeed, in order to build a leader. Nothing else can take the place of long experience, painstakingly accumulated through years of conscientious research and the burning of the midnight oil. Thordarson engineers have always followed this tradition. The result is a type of leadership, accepted and unquestioned among all who appreciate real transformer quality.

THORDARSON

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

Transformer Specialists Since 1895

ORIGINATORS OF TRU-FIDELITY AMPLIFIERS

University



REFLEX SPEAKERS

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

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

EVERY HIGH EFFICIENCY SPEAKER

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

REMEMBER

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

UNIVERSITY LABS., 225 VARICK ST., NYC

Steinweiss Promoted By Columbia

Alex Steinweiss, who has been serving as art director of Columbia Recording Corp., has assumed the duties of advertising manager, it has been announced. Mr. Steinweiss, who has made a brilliant record as Columbia's art director, will continue in this capacity in addition to his new duties. A graduate of the Parsons School of Design, Mr. Steinweiss has been with Columbia since 1940.

Patrick Dolan, who managed the advertising and sales promotion department for the past three years, is on a special war assignment for the government.

Former Spartan President Dies

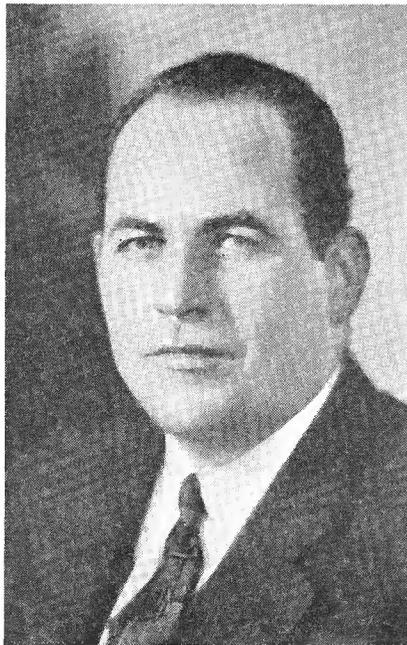
After a long illness, Capt. William Sparks of Jackson, Mich., one of America's great industrial leaders, and past president of the Sparks-Withington Co., died May 13th. He had just passed his seventieth birthday.

Captain Sparks retired from active operation of the company a few years ago. His son, Harry G. Sparks, assumed the position of general manager.

Radio Speakers Honored

Radio Speakers, Inc., 221 E. Cullerton St., Chicago, received the Army-Navy "E" production award on June 1st. The official presentation of the pennant is scheduled for June 22nd. The company is headed by Henry Forster, president.

Oden F. Jester



Mr. Jester, recently named vice pres. of Utah Products Co., has been with the Company for the past six years as general sales manager. Other vice presidents elected by Utah are Austin Ellmore and Remy Hudson.

READRITE

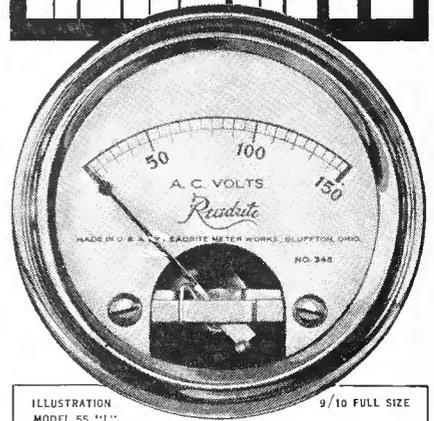


ILLUSTRATION MODEL 55 "L" 9/10 FULL SIZE

A.C. D.C. METERS

Available in all catalogued models and ranges

Scale — 80° — 1 1/2" on enameled metal plate. *Specify Range A.C. or D.C. Add "L" after catalog model number*

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

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

Mounting — 2 3/32" diameter hole. 7/8" depth behind flange.



READRITE METER WORKS, Bluffton, Ohio

TAKE GOOD CARE OF YOUR GREENLEE PUNCHES



They are difficult to replace ... hard to get along without

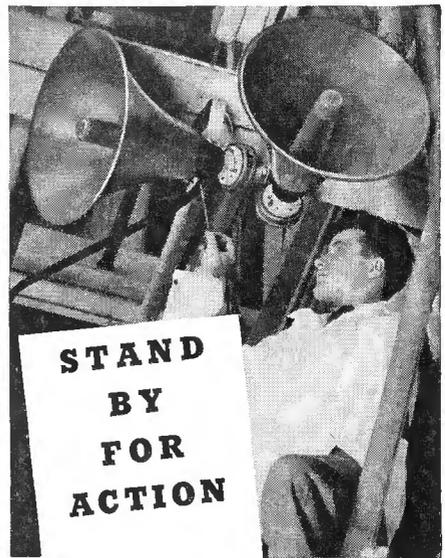
For quick results in cutting holes for connectors and other receptacles in radio chassis, there is no substitute for a set of handy Greenlee Punches. So, if you have a set, take good care of them. They are difficult to replace ... hard to get along without. If they need sharpening, here are a few important instructions.

● Never file or grind outside of cutter. Sharpen cutting edges from both points back to location shown. Do not alter original angle of cutting edge. Leave 1/32" stock on edge. Blunt edges stand up longer, prevent breaking cutter points.



For essential needs, Greenlee Punches are still available — sizes range from 3/4" to 2 1/4". For meters, Knockout Cutters are also available for cutting holes up to 3 1/2". For complete details, write for Catalog 33E

GREENLEE TOOL CO.
1906 Columbia Ave., Rockford, Illinois



IN ACTION, Atlas Sound Equipment is a real stand-by ... tested, proven, dependable. In all weather, under adverse conditions, Atlas Sound instruments perform with the expertness of tried and true veterans. ★ Orders calling for minor conversion of our regular precision line are filled capably and quickly ... consult us freely without obligation.

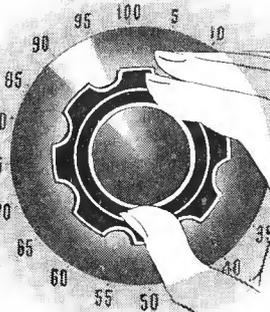


Complete Atlas Sound Catalog on request

ATLAS SOUND CORPORATION
1445 39th Street, Brooklyn, N. Y.

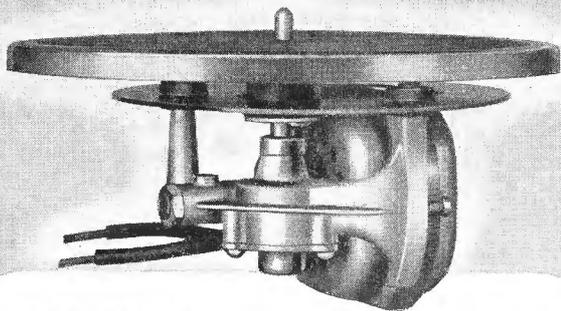
MONARCH Testing-Measuring Instruments . . .

for the laboratory and for the production line, are speeding production now, as never before, due to their exceptional accuracy and dependability. Our specialty is helping radio and electronic manufacturers to produce better units, through furnishing them with the instruments, special coils and small machine parts which are so important.



MONARCH MFG. CO.
2014 N. Major Ave. Chicago, Ill.

GENERAL INDUSTRIES *Smooth Power* MOTORS



PRE-WAR and POST-WAR

In pre-war days, G. I. smooth-power motors, record changers and home recorders achieved leadership in the phonograph field because of their high efficiency, quiet operation and reliable performance.

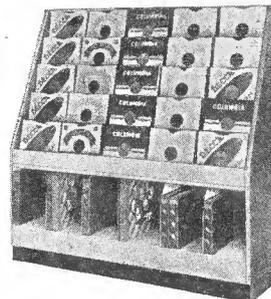
Today, G. I. motors and precision-made devices are being made exclusively for war production. And after Victory you can be assured that the G. I. line will again afford everything desired in quality, versatility and service.



THE GENERAL INDUSTRIES CO.
Department 15, ELYRIA, OHIO

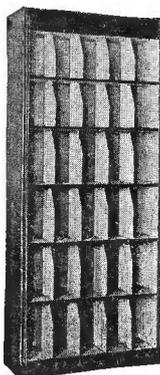
UNCLE SAM COMES FIRST!

RECORD dealers—Better order today! Now that we've gone all-out for Victory, it is possible to produce only a limited quantity of these famous Bitter "Sales Builders". After Uncle Sam it's "first come first served".



BITTER SELF-SERVICE UNIT
(above)

For rapid turnover of popular priced stock. Holds 300 records on slanting face, 16 albums on up-right face (not pictured). Stocks 500 records or 75 albums in lower section. 58" high. Occupies but 5' of floor space in center aisle or wall position.



← **BITTER ALBUM RACK #110**

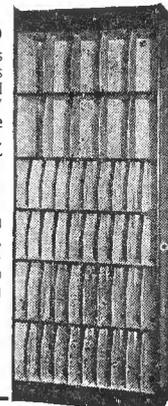
This new album sales stimulator holds about 250 album sets. Same dimensions as the famous Bitter Standard Record Rack (#100) — 2' 10 1/2" long, 7' 2" high, 15" deep; same design; same standard finish—walnut finished birch. May be used interchangeably or together to form attractive unit.

BITTER RECORD RACK #100 →

This attractive, compact unit holds 500 10", 500 12" records, 75 album sets. Specifications same as No. 110. No progressive record dealer can afford to do without the big time and space saving features of this famous record rack.

ILLUSTRATED BOOKLET

Write Today



A. BITTER CONSTRUCTION CORP.
721 E. 133 STREET • NEW YORK, N. Y.

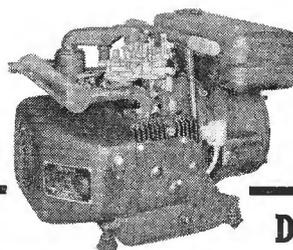
ONAN ELECTRIC PLANTS

Doing a Winning Job in War Communications

★ ONAN ELECTRIC PLANTS are doing a winning job on all Fighting Fronts in critical War Communications Work and other tasks requiring electricity.

Thousands of ONAN PLANTS now in production in ratings from 350 to 35,000 watts, A.C. or D.C. also dual output; 50 to 800 cycles; 6 to 4000 volts; Gasoline driven; Air or water cooled.

COMPACT, STURDY, RELIABLE



Ideal for all communications work. We'll be glad to send you details on your present or post-war need for Electric Plants.

D. W. ONAN & SONS

637 ROYALSTON AVE. • MINNEAPOLIS, MINN.



Advertising is a problem these days. No use talking about QUAM speakers, for we can only sell them on high priorities—but we want to keep some kind of contact with our friends.

We did a lot of thinking about what to say to you each month and finally decided upon this little column of news and comments on the past, present and future of this hectic business of ours. We have no ambition to outshine the Winchells or the Peglers—we build good speakers and good equipment now for the Signal Corps but we are strictly amateur at this column business. We'll try to be interesting, so bear with us and if you don't agree with what we say, tell us about it.

* * * * *

Post war production seems to be a popular subject for conversation right now and a lot of promises are being made. At the risk of sticking our necks out, we say that the public is being kidded into expecting too much in the way of super, super radios and parts right after V day.

If the war lasts for two or three more years manufacturers and dealers will have to make and sell replacement parts and 1942 model radio sets, where tools and dies are still available, until new models are produced. Eventually we are going to have some amazing new radios that will make our finest, de luxe, pre-war models look like Aunt Fannies old butter churn, but that's not going to be right away. And don't think Johnie Q. Public is going to wait. He'll buy so that he can tune in the whistles and cheers when his fighting Yank son comes marching down the gang plank! We predict that the manufacturer and dealer that will have those old models ready soon after the war will be sitting pretty.

Remember to look for us next month, will you?

Helmut Staudland
QUAM-NICHOLS CO.
 33rd Place & Cottage Grove, Chicago



Sparton Executive Tells Plans for Future

Speaking before the recent meeting of the Sparton "Old Timers," W. J. Corbett, vice president of Sparks-Withington, stated that though every endeavor of the automotive division is to speed delivery of equipment to the war fronts, Sparton has not forgotten the future.

Mr. Corbett said that "from the crucibles of war will come new and startling revelations in the realm of science and technology that will be as important in the world of tomorrow as was the automotive cycle in our pre-war era."

Closing his talk, Mr. Corbett said, "in the past, Sparton earned an enviable position of leadership in engineering technology . . . we do not intend to relinquish that standing in the post-war effort . . . new methods of production, new equipment, a highly skilled, closely united and happy family of workers, gives us definite advantages . . . may the dawn of victory come soon to test our faith in these postwar plans."

Vin Ulrich Married

Announced last month in Newburyport, Mass., was the marriage of Vinton K. Ulrich, well known radio executive, to Evelyn Haley of that city. Mr. Ulrich is Engineer in Charge of War Activities for Hytron Corp., Salem, Mass., and was formerly Technical Editor of RADIO TODAY. In his peacetime position at Hytron he was known as one of the youngest sales executives in the industry. Mr. Ulrich is a graduate of Massachusetts Institute of Technology.

The former Miss Haley did her radio work in the offices of the Hytron Corp. plant at Newburyport, and is a graduate of Burdett College. The bride and groom are making their home at the Langdon Apartments, 224 Lafayette St., Salem.

Sylvania Man Now Army Captain

Ralph Merkle, for the past several months a first lieutenant in the office of the Chief Signal Officer, Washington, D. C., has become a captain in the same branch of the service.

Captain Merkle, who is widely known in the radio field, received a leave of absence from Sylvania Electric Products Inc. in June, 1942, where he held a responsible position in the commercial engineering department, devoting much of his time to the preparation of various technical and educational publications. He was also technical editor of "Sylvania News." He joined Sylvania in 1929, and had been previously employed by General Electric Co., and by the Federal Radio Co.

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