

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

**MAY**



**BROADCAST STATIONS**



**BROADCAST PROGRAMS**

**MILLION-DOLLAR ENTERTAINMENT**

**WAR NEWS BULLETINS**

**F. D. R.'S FIRESIDE CHATS**

**MORALE-STIMULATING BROADCASTS**

**GREAT MUSIC, GREAT ARTISTS**

**WAR-TIME PLAYS**

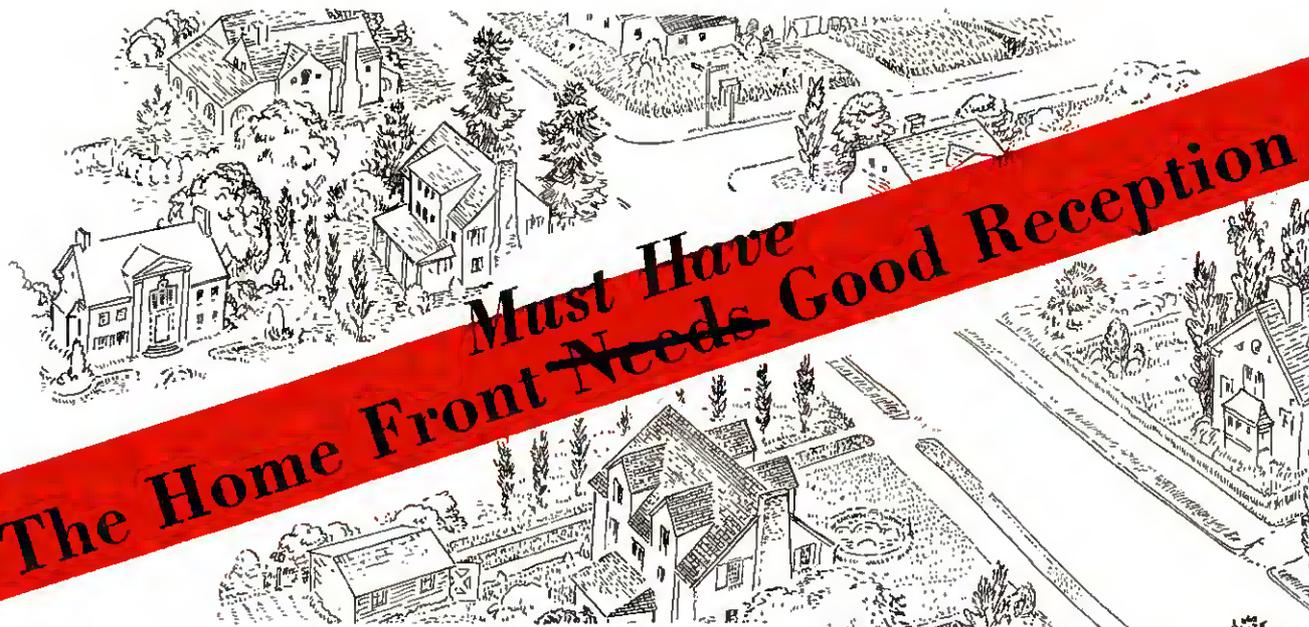
**CIVILIAN DEFENSE BULLETINS**

**RECRUITING ANNOUNCEMENTS**

**WAR RELIEF CALLS**

**ANTI-PROPAGANDA GUIDANCE**

**NOW, MORE THAN EVER,  
ALL RADIO DEPENDS ON  
THE RADIO **SERVICEMAN!****



**The Home Front ~~Needs~~ Must Have Good Reception**

“Keep ’em listening!”

Despite restricted production and material shortages, as a radio service engineer, we urge you to “keep ’em listening!”

We know how essential a home front job you perform. And, you know you can depend on Mallory for practical help in meeting the brain-racking radio service problems imposed by current shortages and restricted production.

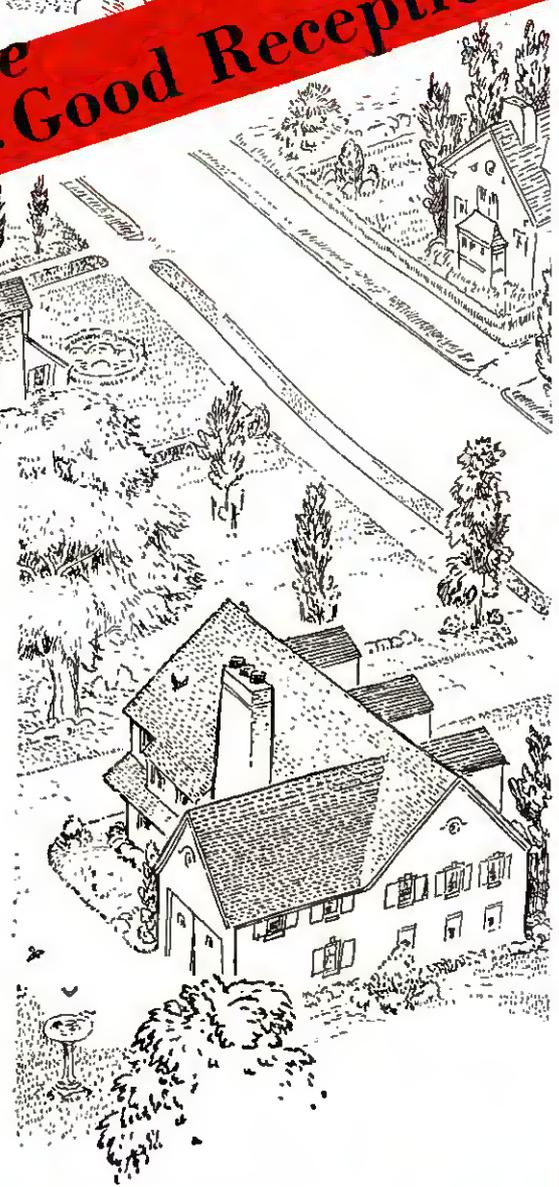
Although we are up to our ears in wartime production, we haven't forgotten your needs for one instant.

We are making every effort to provide adequate supplies of Mallory Approved Precision Parts. Our research laboratories are working night and day, coping with the present, anticipating the future. Problems induced by material shortages have, in many cases, resulted in engineering adaptations that mean real progress in good servicing.

And we are getting a fine demonstration of how beautifully the Mallory policies of standardizing parts and simplifying lines have operated to aid servicemen.

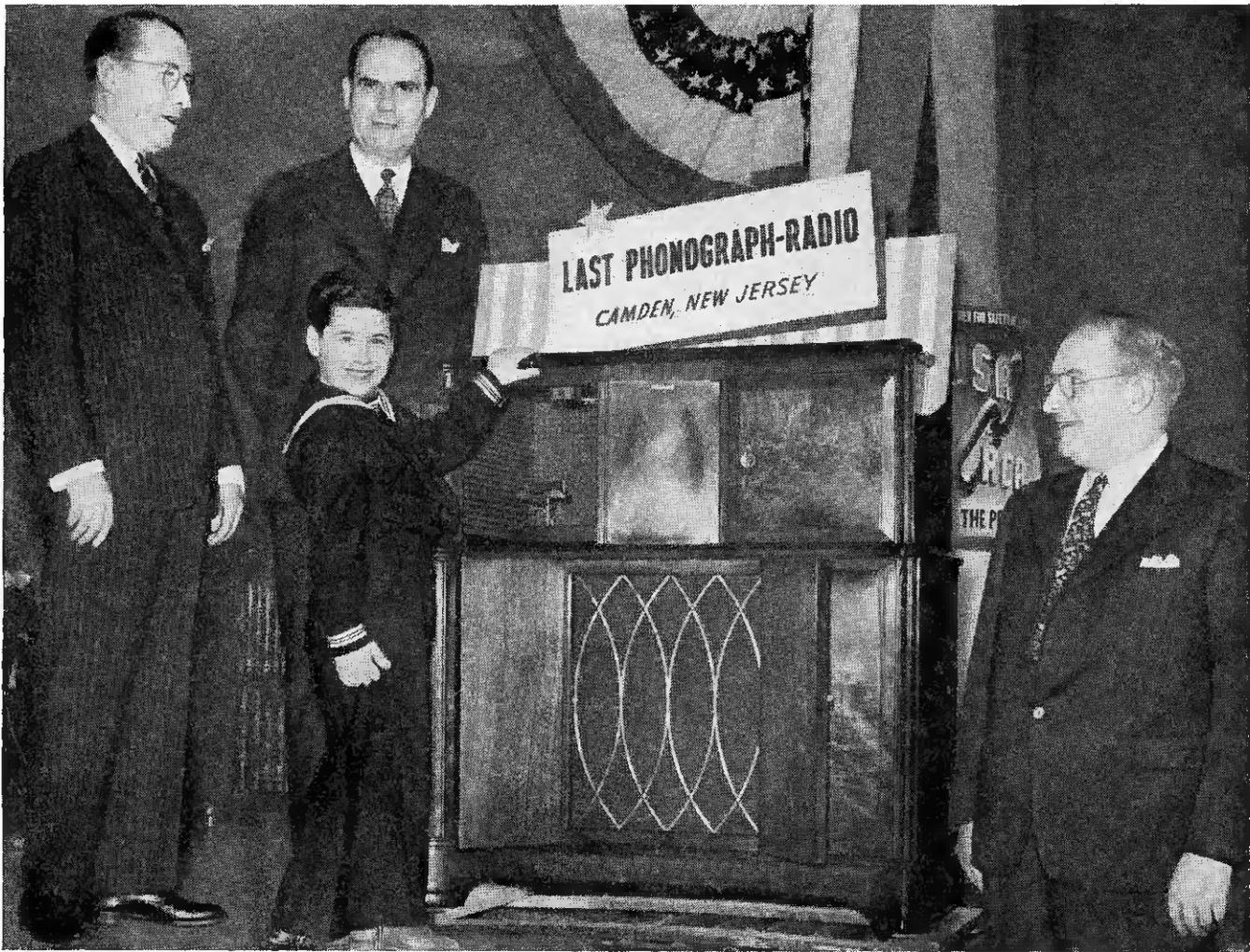
You can depend on Mallory and Mallory Distributors for real help, while you work to “keep ’em listening.”

**P. R. MALLORY & CO., Inc.**  
**INDIANAPOLIS INDIANA**  
Cable "Pelmollo"



**P. R. MALLORY & CO. Inc.**  
**MALLORY**  
*Approved Precision Products*





Here you see the last RCA Victrola No. 17,199,547 being presented on Tuesday, April 7, 1942, to the Georgia Warm Springs Foundation by the RCA Victor Family of Workers. Left to right; Basil O'Connor, Chairman of the Executive Board, Georgia Warm

Springs Foundation; William L. Batt, Director of the Raw Materials Division of the War Production Board, William Robert Feist, former patient at the Foundation; and Robert Shannon, President, RCA Manufacturing Company, Inc.

## WE'VE GONE OUT FOR VICTORY!

On April 7, the last Camden-built RCA Victrola rolled off the lines, to make way for war work

RCA Victor's last instrument—number 17,199,547—rolled off the Camden production lines on April 7. This set was presented to the Georgia Warm Springs Foundation by the RCA Victor Family—to uplift the spirits and morale of the Foundation's young patients.

Actually, the chassis of this last set had been completed on March 5—50 days *ahead* of the deadline set by the War Production Board!

For as early as September, 1940, we said in a published advertise-

ment, "With RCA Victor, Defense comes first. By comparison, we hold nothing else important." That policy of preparedness has made it possible for us to "Beat the Promise" to America not once, but many times—hastening the day when RCA Victor Dealers can again sell RCA Victor radios and phonograph-radios to an America at peace.

We are grateful to the many RCA Victor Dealers, whose cooperation helped and is helping us to participate in the war effort on a fuller war foot-

ing. By selling RCA Victor radios and RCA Victrolas in the past, you helped us to grow and expand—made possible the facilities now serving America-at-war. By foregoing civilian instruments today, you are helping us to devote our attention to war production.

You, the Dealer—we, the Manufacturer—are now all in the same business. That business is Victory!

**BUY WAR BONDS EVERY WEEK!**

## RCA VICTOR

RCA Manufacturing Co., Inc., Camden, N. J.



*All out  
Performance*

with

**METAL TUBES**

Metal Radio Tubes can be depended upon for all-out performance. That's why 80,000,000 metal tubes are in use. That's why we make and recommend metal tubes for best results.

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



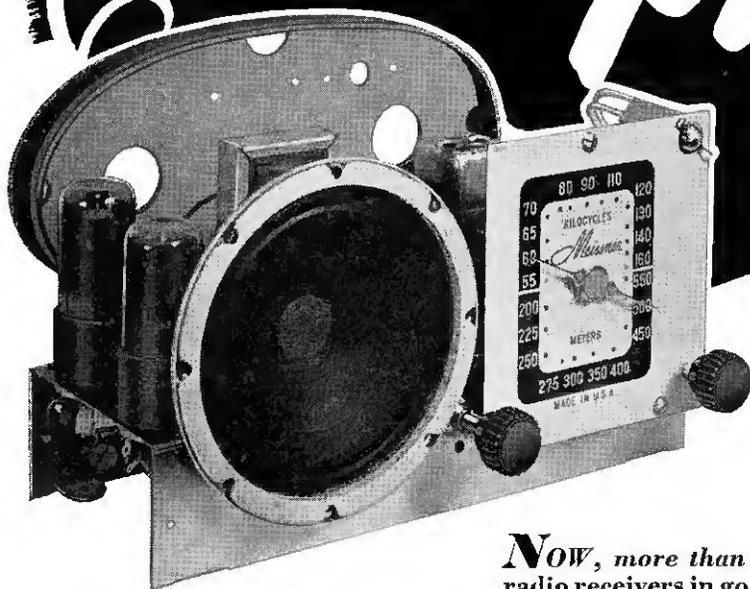
**KEN-RAD**

*Metal Radio Tubes*



**KEN-RAD TUBE & LAMP CORPORATION, Owensboro, Kentucky**

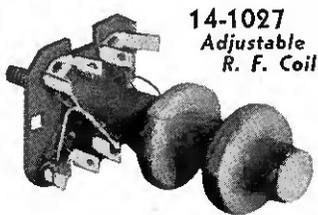
# Keep 'em Playing



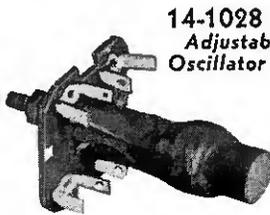
## Use Meissner Replacement Parts

*Now, more than ever before, it is vitally necessary to keep radio receivers in good condition . . . Meissner replacement parts*

have proven their ability to satisfy even the most discriminating serviceman. See your Meissner distributor for replacement Coils of all types . . . I.F. Transformers . . . R.F. Coils . . . Antenna Coils . . . Coil Assemblies . . . FM components . . . R.F. Chokes . . . Switches . . . Dials . . . Variable Condensers . . . Trimmers and Padders . . . Relays . . . Wave Traps . . . Chokes . . . Interference Filters . . . Crystal Calibrator . . . Signal Splicer . . . Signal Shifter . . . Uni-signal Selector.



14-1027  
Adjustable  
R. F. Coil



14-1028  
Adjustable  
Oscillator Coil



14-1026  
Adjustable  
Antenna Coil

Why try to repair defective coils or wait to obtain exact duplicates, or wait to have coils re-wound. Meissner Universal adjustable series will replace

defective antenna, RF and oscillator coils in over 85% of present day receivers. Adjustable Ferrocarr iron cores used in the Universal replace-

ment coils give additional gain and selectivity to the receiver. Try them on your next coil replacement job. In stock at all Meissner Jobbers.

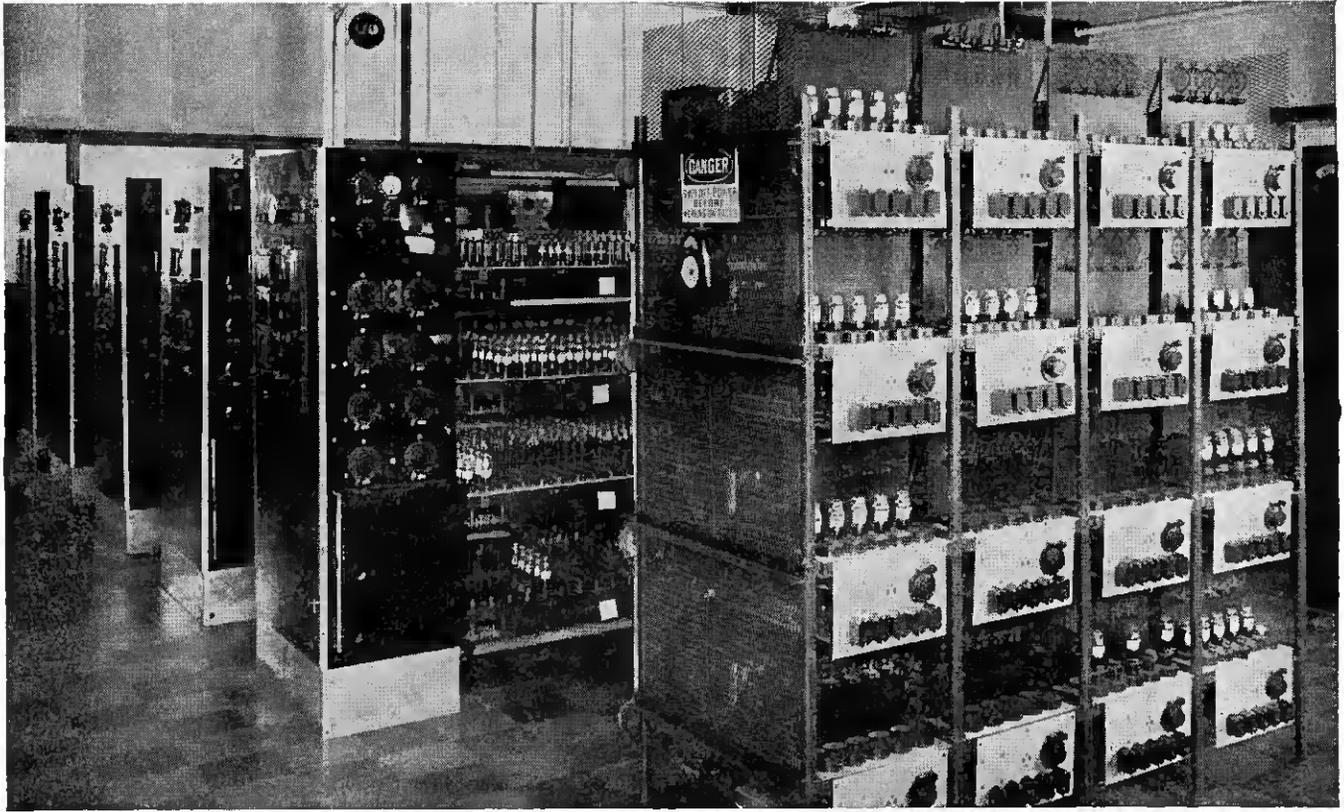
**MEISSNER QUALITY NEVER VARIES**

Write Dept. RT-5 for Complete Catalog

# Meissner

MOUNT CARMEL, ILLINOIS

**“PRECISION-BUILT PRODUCTS”**



## "Lifers" in a Good Cause

THE radio tubes you see here are good radio tubes—every bit as good as Sylvania's best. Yet not one of them will ever live to see the inside of a receiving set.

Each has been sentenced to a life term in the testing racks—where, under conditions akin to actual service, it is subjected to the most thorough checks and trials our engineers can devise.

It's pretty tough on these tubes—but knowledge gained from their ordeal is one reason for the matchless performance and long-lived efficiency of the whole Sylvania line.

Another important reason is the fact that radio tube-making is Sylvania's *one* job in radio. That means all of our time and skill are devoted to improving and refining our product, to keeping it first in quality.

So it's easy to understand why we can offer you such a clean franchise—with no ifs, buts or provisos.

With radio sets now in use slated to stay for the duration, fine tubes are more essential than ever before. Isn't it wise to deal with an organization in which experience focuses on making only the highest quality you can buy?

IT PAYS TO SELL SYLVANIA



SYLVANIA LOCK-IN RECEIVING TUBES



RECEIVING TUBES REGULAR STYLE

**SYLVANIA**  
RADIO TUBE DIVISION

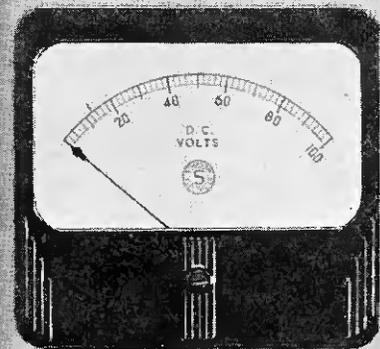
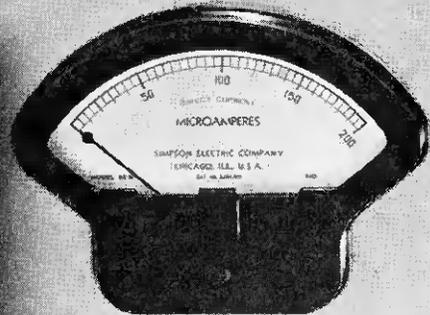
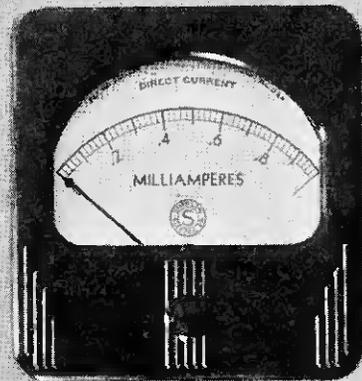
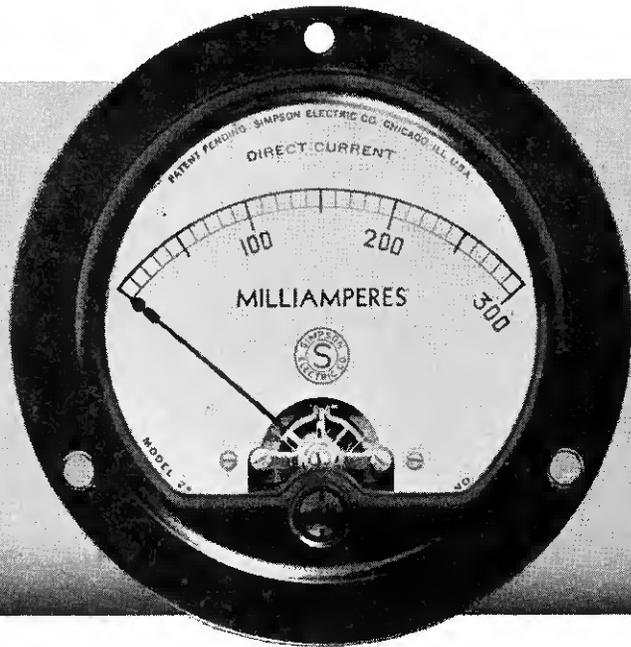
**HYGRADE SYLVANIA CORPORATION**

New York City

EMPORIUM, PA.

Salem, Mass.

*Also makers of HYGRADE Incandescent Lamps, Fluorescent Lamps and Fixtures*



## On their RECORD-

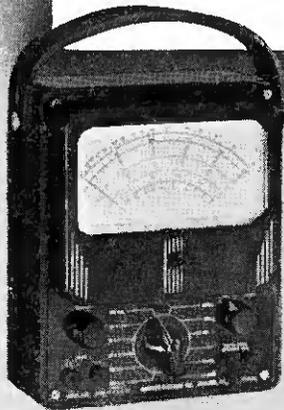
**E**LECTRICAL instruments have been called upon to do a big job—and that is the kind of job that Simpson Instruments are built to handle.

This fact stands out in the Simpson record. Try to find a Simpson model that has not been a complete success. Try to find a Simpson Instrument that has failed to do its job properly. Can you think of any product for which a better record could be cited?

If your requirements are vital enough to give you the right to buy instruments, they are vital enough to deserve the best.

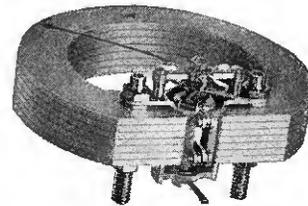
On their record—past and present—that means Simpson!

SIMPSON ELECTRIC CO., 5208-18 Kinzie St., Chicago, Ill.



### MODEL 260 High Sensitivity Tester

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



### The SIMPSON Full Bridge Type Movement, with Soft Iron Pole Pieces

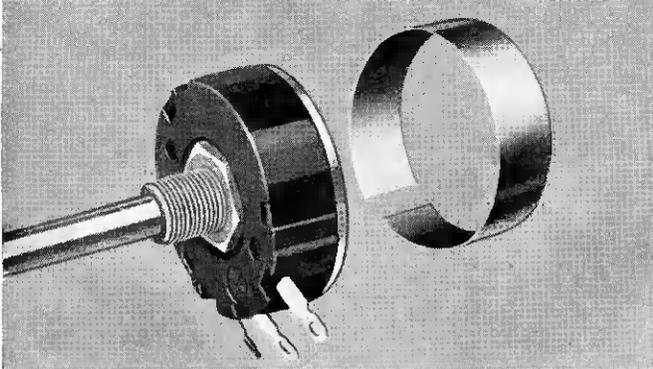
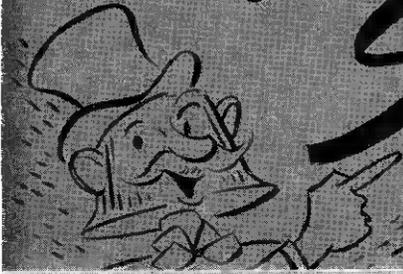
• This is the fighting heart of every Simpson Instrument. Soft iron pole pieces distribute magnetic flux evenly, assuring perfect accuracy. Bridge type construction holds the moving assembly always in perfect alignment.

# Simpson

INSTRUMENTS THAT STAY ACCURATE

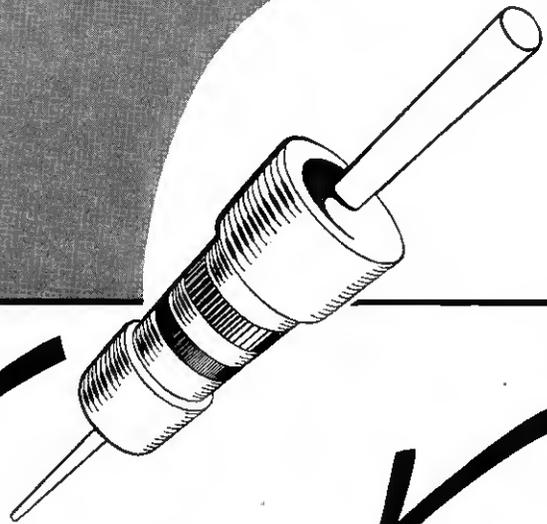
Always

Specify  
**Centralab**



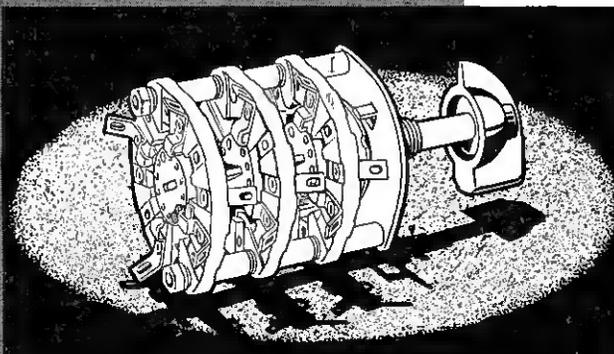
## CONTROLS

Featuring the famous WALL TYPE resistor element which hugs the inner circumference of the black moulded bakelite case. Exclusive non-rubbing contact assures quiet smooth rotation and long life. Available in STANDARD, MID-GET AND ELF with or without switch cover.



## RESISTORS

Available in two types: RADIAL LEAD and AXIAL LEAD. Both feature a center core of resistance material, surrounded by a dense shock-proof ceramic providing strength and protection against humidity. Core and jacket are fired together at 2500 degrees F: into a single solid unit, hard and durable as stone.



## SWITCHES

Both selector and transmitter switches are available in an infinite number of combinations . . . ideal for high frequency circuits with minimum losses.

Most switches are supplied with an "adjustable stop" index . . . permitting the selection of from two to twenty-three positions.

**CENTRALAB** through every emergency continues to adhere to its policy of "performance plus" at all times.

The slogan "ALWAYS SPECIFY CENTRALAB" which has appeared in our advertising from the very inception of this name is as timely today as it was fifteen years ago.

Today as then . . . there is no substitute for **QUALITY**.

Write for Catalogue No. 23

**CENTRALAB: Div. of Globe-Union Inc.**  
Milwaukee • Wisconsin

# HIGH FREQUENCIES

# Ultra HIGH FREQUENCIES

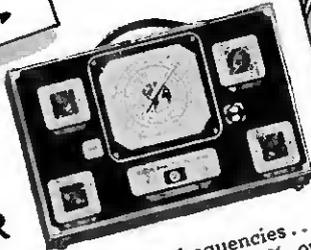
30,000 KC.

## HERE ARE THE INSTRUMENTS FOR YOUR MEASUREMENT NEEDS!

*50 kc to 33 mc  
fundamental  
frequencies*

### WESTON Model 776 OSCILLATOR

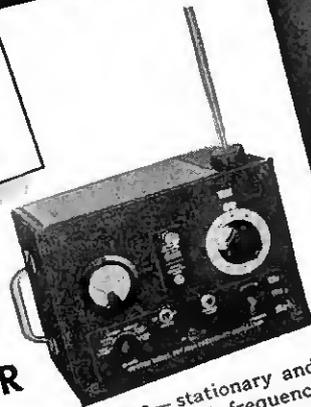
For testing broadcast and intermediate frequencies... in vacuum tube circuits. Accurate within 1/2 of 1% on broadcast bands—1% on short wave bands. Has large 330° hand calibrated dial. WESTON AAC (Automatic Amplitude Control) circuit assures uniform output level regardless of frequency (no trimmers or padders used.) Triple shielding eliminates leakage.



*22 mc to 150 mc  
fundamental  
frequencies*

### WESTON Model 787 UHF OSCILLATOR

For testing transmitters and receivers—stationary and mobile—AM and FM types operating in high frequency bands. Inductive tuning system provides fundamental frequencies with higher resonant circuit voltages and broad tuning range. High order of stability and reset-ability over entire frequency band. Reads 40 kc. per division at 40 mc. Modulation frequencies 400-1300 and 3000 cycles. Compact, Portable, battery operated.



*for potential  
measurements over  
broad frequency  
ranges*

### WESTON Model 669 Vacuum Tube Voltmeter

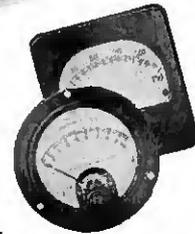
For measuring voltages in vacuum tube circuits where frequency is a factor. Has low input capacity of 5 microfarads with 6" leads. All ranges operate direct to measuring tube grid, providing a maximum input resistance and impedance device. Loading effect on circuit under test is only that of the tube itself, as no grid resistors are used on 0-1.2-3-6-8-12-16 volts ranges. Phone jacks provided for making audible tests. Ranges 0-12-30-60-80-120-160 volts full scale with multipliers.



*for your panel  
and built-in  
needs*

### WESTON Thermo-Ammeters

WESTON improved design of heating elements provides extreme accuracy on high frequencies (frequency error less than 2% up to 65 mc). Available as ammeters and milliammeters in ranges for all transmitters including portables. Also a complete line of ultra-sensitive portable instruments for high frequency laboratory measurements. ... for complete information on these and other WESTON instruments see your local WESTON representative, or write Weston Electrical Instrument Corporation, 581 Frelinghuysen Avenue, Newark, New Jersey.



Laboratory Standards... Precision DC and AC Portables... Instrument Transformers... Sensitive Relays... DC, AC, and Thermo Switchboard and Panel Instruments.

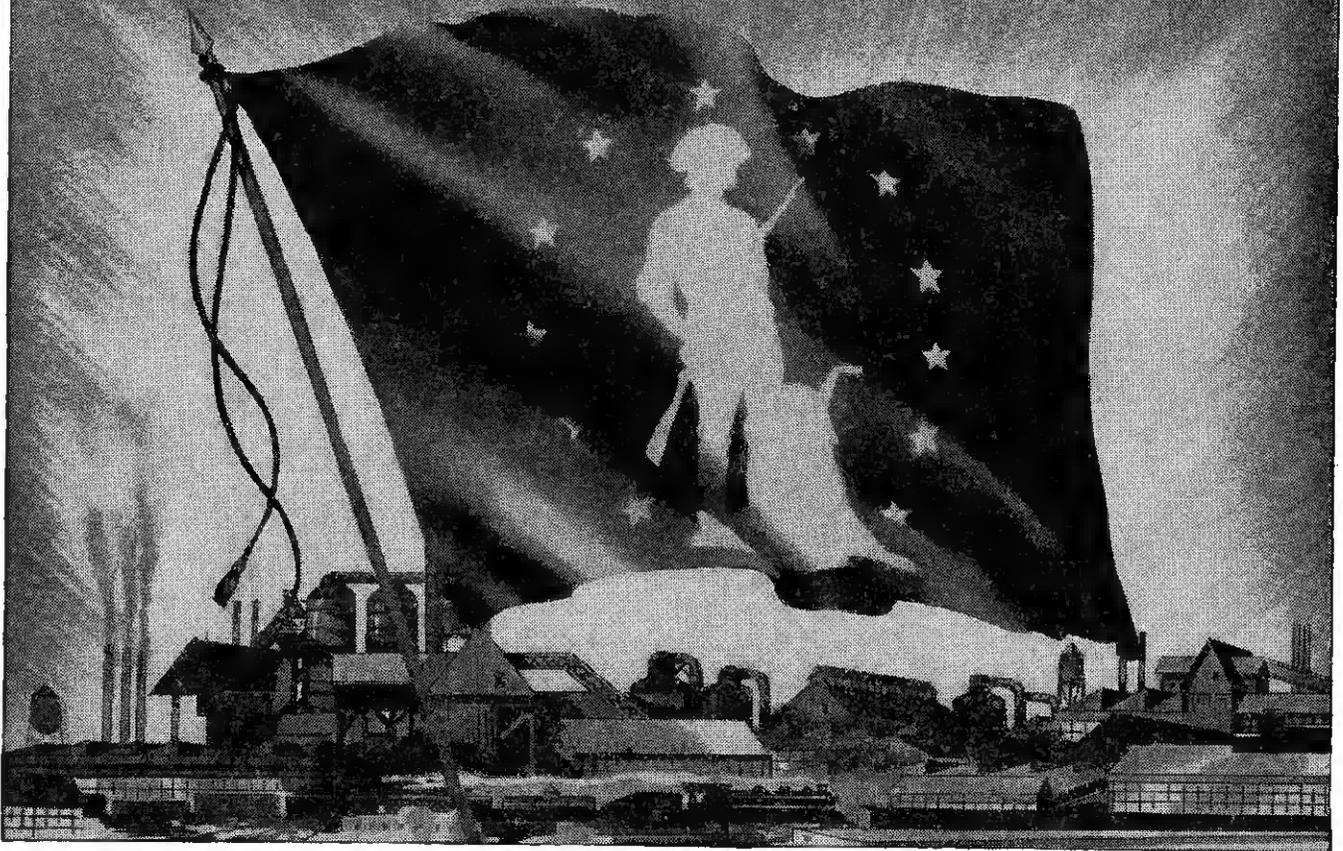
# WESTON

Specialized Test Equipment... Light Measurement and Control Devices... Exposure Meters... Aircraft Instruments... Electric Tachometers... Dial Thermometers.

FOR OVER 54 YEARS LEADERS IN ELECTRICAL MEASURING INSTRUMENTS

RADIO RETAILING Combined with RADIO TODAY, May, 1942

A WAR MESSAGE FROM THE UNITED STATES TREASURY DEPARTMENT



*Next to the Stars and Stripes . . .*

## AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly*, every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that

you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, **TIME IS SHORT.**

*Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.*

*Make Every Pay Day "Bond Day"*



U. S. **WAR Bonds** ★ **Stamps**

This Space is a Contribution to Victory by RADIO RETAILING-TODAY

Where lives hang in the  
balance  
They use **RAYTHEON**  
tubes!

Submarine duty is exacting work . . . mistakes cost lives . . . radio tube performance must be of the highest quality especially when used in submarine signalling work . . . they must be on the job!

RAYTHEON TUBES are daily performing this difficult task. RAYTHEON quality is meeting all these exacting requirements for dependable performance.

This unusual service is typical of the plus advantages you gain with RAYTHEON tubes . . . servicemen and dealers are making more money on RAYTHEON replacements . . . your RAYTHEON distributor can tell you why . . . see him today!

Raytheon Production Corporation—Newton, Mass.

Los Angeles  
New York  
Chicago  
Atlanta

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



**RAYTHEON**  
RADIO TUBES

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

# "I've found a way to make radio service business pay!"

—BOB KIPLE

**If you want to build repair and service business, take a tip from the experience of the Broadway-North Side Radio Co., Chicago.**

"One reason I'm not too worried by the shortage of new radios," says Robert R. Kiple, owner and manager of the Broadway-North Side Radio Co., Chicago, Ill., "is that we started out as a service business 10 years ago. And right from the start we hit on the one way to make a service business pay—*do the job right the first time!*

"When we find a resistor or bypass bad in a set, we do not let it go by simply replacing the part. We bring the set in and go over every circuit carefully. Maybe it has nothing more than that wrong, but often we find little troubles that would be worse in a couple of months if neglected. By telling the customer the truth, we fix the set right the first time, so we're not constantly having to bring it back.

"You'd be surprised how much people talk about this kind of serv-

ice. It's given us a reputation for fair-dealing and good workmanship. And they don't mind paying an inspection charge, because they know we're giving them something for their money.

"Looking ahead to a boom in service business, we have built up our stock of tubes and parts about 250% over normal. Of course, the Stromberg-Carlson 24-hour service on factory parts is a big help in emphasizing speed on our repairs.

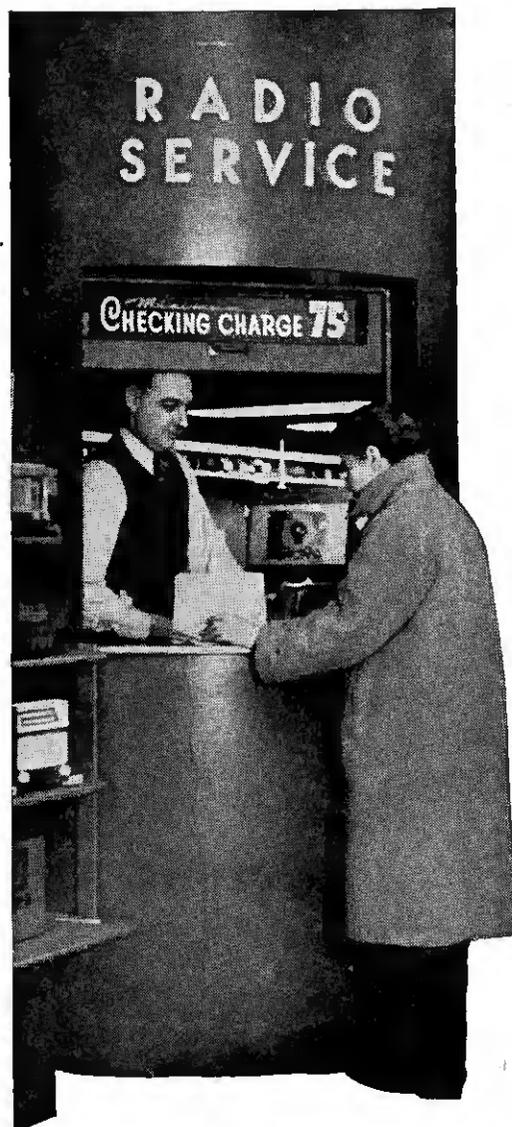
"We are holding our trade in other ways, too. We're continuing our Red Book advertising, which we were the first in this vicinity to adopt. And we are paying extra close attention to our record business, studying the music, composers, and artists for clues to the potential popularity of new records as a guide for our customers and for us in our buying.

"Between our active service business and our healthy record department, we are confident we can hold our customers and carry on successfully until new radios are again available."

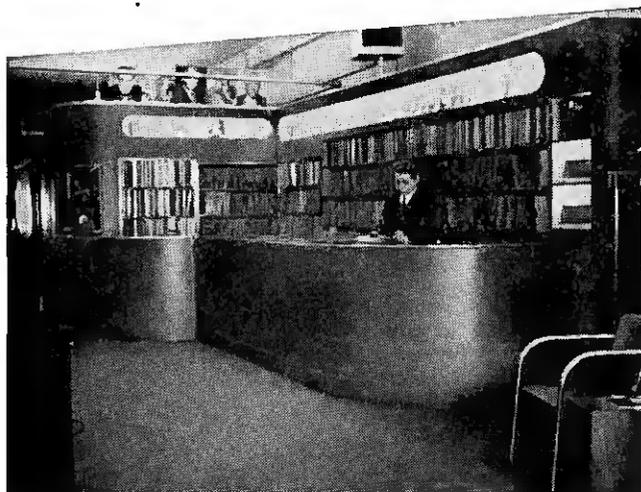
IN RADIOS, TELEPHONE, SOUND SYSTEMS . . . THERE IS NOTHING FINER THAN A

## STROMBERG-CARLSON

ROCHESTER, NEW YORK



Commenting on the customer attitude toward a minimum service charge, Shop Foreman R. F. Graham (above) says: "Most people realize that a thorough test costs money, and agree that a minimum of 75c for this service is sensible."



At the Broadway-North Side Radio Co. records are a large and profitable department. With 12 listening positions (including both head-phone spots and booths), and a diversified assortment, sales of 400 records have been chalked up in a single day!



"We have six working positions," declares Mr. Kiple, "plus a large general bench; all with excellent fluorescent lighting. We have plenty of room for speedy service. And our testing equipment is geared to handle almost any type of trouble."

# RADIO RETAILING

COMBINED  
WITH

# RADIO TODAY

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

## A "Shot-by-Shot" Report, Via PA

On the day Lieutenant O'Hare shot down five Jap planes, sound amplifiers also did a job, the story of which seems not to have gotten into the news.

Ordinarily the men below decks on an airplane carrier or other ship in action, know little about what is going on, above and around the ship. They have to attend to their jobs, shut away from the stirring events that may be taking place nearby.

But the day of Lt. O'Hare's exploit all that was changed! When the doughty flier went into action, an officer in an observation post on the plane-carrier grabbed a microphone feeding loudspeakers all down through the great ship. And as the American ace dived in, destroying one Jap plane after another, the entire crew of the big carrier, working at their own battle positions, heard a "blow-by-blow" report of the battle, over the ship's loudspeaker system!

## War Work for Distributors

Many automobile dealers have turned their salesrooms and repair departments into light assembly plants for war work. Other local business men have become sub-contractors for the manufacture of munitions and war supplies.

Isn't there an idea here for radio men also to think about? It has been suggested that radio manufacturers who have war work, could sub-let some of the simpler assembly jobs to their distributors—who soon may have little merchandise to distribute. Such jobber organizations could thus put their workers and workrooms on the job of war assembly and munitions making.

It would be a way to hold the jobbers employees together. Also it would tie manufacturer and distributor together on a new basis, for the duration—and against the day when distribution will again be needed and in a big way!

## The Search for New Lines

Whatever else is gone, the cautious buying habits of radio dealers and jobbers remain. They need new lines to replace their thinning stocks of sets, but they aren't taking on the first fancy merchandise that comes along. They want something suitable for a warring nation, related to radio if possible, and not "chicken feed."

Our inquiries on this subject have ranged across the U.S.A. and some dealer reports are eye-openers. Many are going in for service, and are developing repair promotion and receiver check-up to a high degree. There's also an extra stir in the sound business—public-address installations for war plants. Some outfits have actually turned to

light assembly and manufacture, converting their service floors to machine shops, and turning out small radio parts for the Army, Navy or Signal Corps.

But as for merchandise itself, the talk swung to phonograph records for many weeks, and retailers looked with relish at the flourishing disc business. When WPB cracked down on the supply of shellac, however, another good bet went out the window. Now they're talking re-conditioned radios, furniture (particularly if related to radio and records), blackout devices, stirrup-pumps, games and toys, picture frames, books, wallpaper and paint, record cabinets and indexes, and small musical instruments.

By next month, a number of substantial trends should emerge from this "search for substitutes" and our plans are to publish them under the general head of industry conversion. Or maybe the report should appear under several heads, such as resourcefulness, skill, ingenuity, and discretion, and do proper honor to the merchandising judgment of the men in our business.

## "Service Women"—or Skirts at the Service Bench!

For years much of the assembly work and soldering in the making of home radio sets, has been done by women. Women are painstaking and attentive to details; they handle tedious, repetitive jobs more easily than men do.

So now, with radio men being called to the colors, it is proposed that this method of using women—so successful in radio manufacturing—be applied to the repair and servicing of home radios. The plan proposed is that receiver troubles would first be diagnosed by a technically-qualified man supervisor, and the necessary work indicated for each set. Actual repairs and replacements would then be completed by women workers.

The weakness of such a plan lies, we think, in the fact that trouble in a radio set usually takes *more time to find*



If the Lipstick Reserves are now to take up the soldering iron, the junky old service shop will never be the same!

than to *repair*. The actual soldering is a small part of the job. *Diagnosing* the trouble will still be the chief problem.

So the proposed "woman technique" doesn't promise much saving, until Miss Service Gal can be trained to use her noodle and her technical knowledge, as well as her skillful fingers!



Big rally of workers in the war-converted plant of Stromberg-Carlson as Lt. Comm. A. E. Rice, USNR, commends war production drive there. ↑

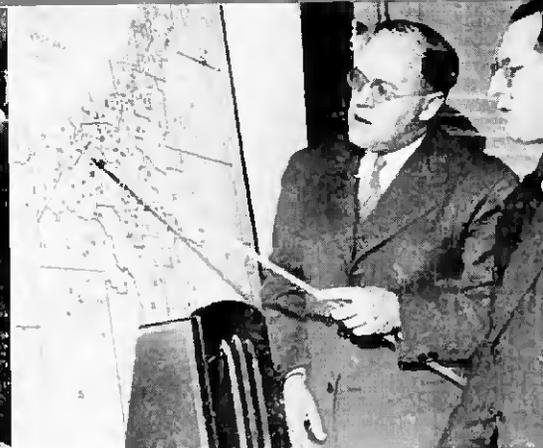


No more refrigs. from Nash-Kelvinator, Detroit —they're all celebrating start of more war work. ↑

Right, U.S. war birds bristle with antennas and get signal to "peel off" for attack. (U.S. Navy Photo)



# Radio WORKS to WIN



Map and speaker unit above illustrate Cleveland's own "radio network" to warn schools in air raids.

At left, NYC television studios produce a bomb-spraying scene as part of official instruction shows for 54,000 air raid wardens



Above is Mary Small, a Blue Network star singer on "Daughters of Uncle Sam," another show in the Victory spirit.



Upper left, a 6-lb. portable radio developed by the Forest Service, cooperates with the Army in protecting vital U.S. areas.

Directly at left, the CBS actress Ann Eden of the "They Live Forever" program, a powerful dramatization of war heroes' efforts.

Below, an officer aboard a Navy patrol bomber stands guard over the Atlantic seaboard, depending on throat microphone.





Plant anti-sabotage devices are being used in increasing numbers. Guard above is looking over the "acoustic fence" pickup. See story on page 34.

# Wartime Jobs for Radio Apparatus

## Special Radio Devices and Apparatus Needed in Wartime Civilian and Plant Defense Are "Down Radiomen's Alley"

• Present war conditions in every community have opened up new sales and installation opportunities for local radio men.

There are air-raid alarms and switches to be sold and installed, and anti-sabotage devices to be provided. Sound equipment finds many new uses for both civilian and industrial purposes. And for the radio man who makes his place of business local headquarters for war-emergency equipment (most of which is radio-tube apparatus) there are other supplementary products which the public also wants, like luminous paints, blackout lamps and lamp shades, and window black-out material.

The radio man has an inside track to this special wartime business because most of the major devices used in blackout alarms and anti-sabotage devices employ tubes, amplifiers, relays and sound equipment. Because of the radio man's special knowledge

he is better equipped than everyone else in town to supply and install this emergency apparatus.

For industrial-plant installations, of course, he can secure equipment under the plant's usual priority when the plant is engaged in war work. And for miscellaneous alarms and sound systems, demanded by his local civilian defense group, the radio man can if necessary adapt existing radio and sound equipment on hand or in stock, to serve special war-time emergency services.

### Blackout Switches

Extinguishing lights on business premises and in show-windows at the time of an air-raid alarm, is one service for which there has been the greatest demand. Since the local street lights are invariably extinguished in such a blackout, a photo cell relay tying up the store lighting with the street illumination, will provide automatic extinguishing of the

store lights. The photo cell merely has to be focussed on a nearby street light. When the street lights go out, off goes the store lighting, too.

Another method of extinguishing lights utilizes the carrier-wave of some broadcast station received well locally. If the station shuts down, as is expected to happen during an air-raid alarm, the absence of carrier causes a relay to drop back, opening the lighting switch. Even should the broadcast carrier come back on, the lights preferably remain off until manually restored by an authorized person; this precaution is provided to prevent saboteurs from turning on lights during an air raid. Such radio-controlled lighting switches have been developed by a number of different inventors and have been applied to controlling street lights, signs, store lights, show-windows and residence lighting.

### Audible Alarms

Such a relay mechanism, actuated by interruption of the carrier, can also be used to sound an alarm. But a simpler air-raid alarm method employs the oscillation of the radio set itself, which sets up a loud howl if the station carrier is interrupted.

Meanwhile the recently publicized "Alert" receiver, which embodies tuned relays sensitive to sub-audible frequencies such as 24 cycles and 36 cycles for "on" and "off" respectively enables local alarms to be registered or turned off, by putting the corresponding sub-audible frequency on the station's carrier. This can be done without the actuating impulses being noticeable on the station's regular broadcast program.

Public-address systems and inter-communicators have been increasingly installed and used in war plants for spreading alarms, delivering messages, providing music, and disseminating inspirational talks to groups of workers.

Siren amplifiers fed by oscillators, also make a valuable form of air-raid alarm for industrial plant and small-town use. The siren sounds can be fed over plant loud speakers, and in towns, through steeple and tower reproducers, to cover wide areas.

Recordings are now available to serve in the same way. By playing one of the "air raid alarm" records, a variable-pitch tone lasting two minutes, goes out over the plant or town sound system. An "all clear" signal is also supplied on the same record. This "all clear" consists of a single continuous, pleasing note, lasting two minutes.

#### **Anti-Sabotage Protection**

Anti-sabotage protection for industrial plants and key transportation centers, can be provided by photo-cell alarms. These preferably are invisible infra-red or ultra-violet beams, and sound an alarm if any trespasser intercepts the beam. Another new development is the "acoustic fence" which, as described on a following page, employs sound pick-ups at intervals along the fence, so that the entire factory enclosure serves as a listening post if anyone attempts to climb the fence, cut an opening in it, or tunnel under it.

All of these air-raid alarms, blackout switches, and anti-sabotage devices employ tubes, amplifiers, transformers, condensers, relays and other parts familiar to radio men. For war-plant installations carrying the necessary priority, the usual method of priority purchases applies. To meet demands of civilian-defense uses, radio men can often adapt parts and equipment from their own radio stocks, to these new war-time applications.

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**For Directory  
of  
Makers of Blackout  
and  
Emergency Equipment  
See Page 42**

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### **Tube Devices Radio Men Can Sell**

**Photo-electric Switches**—Turn off house lights or ring alarm if street lights go off.

**Radio Switches and Alarms**—Turn off lights or ring alarm if broadcast station goes off the air.

**"Radio-alert"**—Special receiver which picks up inaudible impulses carried by broadcast station operates alarm.

**Public Address Systems**—Special provision for receiving and spreading air-raid alarms, sabotage alarms, etc. in industrial plants.

**Siren Amplifiers**—Air-raid warnings for plants, towers, steeples.

**Photo-cell Anti-sabotage Beams** — To form invisible fence around plant (infra-red or ultra-violet) for detecting trespassers.

**"Acoustic Fence"**—Phonograph pickups linked by wires, enable faint sounds to be detected and recorded.

**Intercommunicators**—For factory intercommunication and alarms.

**Portable PA Systems**—For alarms, department speeches, etc.

**Luminous Paints**—For marking signs or danger spots in event of blackouts.

**Blackout lamps**—Incandescent bulbs and special shades which reduce visibility of light source.

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Portable sound equipment such as this unit is finding wide use in the entertainment of employees, making special announcements at group meetings, etc.





The surgeon's knife must sometimes be used, in efforts to restore health—

# **YOU'LL have to**

**“Cutting expenses” soon to be the chief concern of dealers**

Confronted by war conditions, every man in the radio business must make new and drastic business plans.

This means facing the situation squarely, and applying the remedies promptly.

Every radio-dealer must control and reduce his expense. Here are some ways to go about cutting business outgo:

## **1. Prepare a Budget**

Obviously, before the dealer can do an intelligent job of expense reduction, he must know all he can about his expenses.

This means that, as a business man, you must study your expenses, and challenge every item.

Then, based upon your keen knowledge of your own expenses, prepare a budget, an exacting budget. And resolve that the only way you will depart from that budget will be to reduce it.

Photo by Ewing Gallowsay

## **2. Check Systems, Methods, Practices**

Then you must check your system, your methods, what you do and how you do it, in relation to your expenses.

Everything you do—and plenty that you don't do—costs you money. Anything you do which does not pay for itself, you should ruthlessly discard. Root out every expense which is not absolutely necessary and stop it.

In every business you will find many such expense-producing ideas:

Records which take time and money to keep, yet are seldom if ever used.  
Needless telephone calls.

Electricity which is consumed far beyond actual needs, radios left turned on, unnecessary lights burning.

Stationery wasted, small parts in the service department broken, lost, wasted.

Cabinets scratched, deliveries poorly timed and routed.

Go on down the list and you will be surprised how much money you waste, how much you do that is not really necessary. And a dollar saved is a dollar earned.

## **3. Reduce Sales and Office Force**

You must be prepared to work harder yourself and expect your co-workers to do the same. Because your very future existence is at stake, you should reduce your office, sales and other staff as much as you can—as soon as you can—now!

Only such employees as you know give more to your business than they take from it, can you afford to keep. Sentiment has no place in war.

## **4. Consolidate Your Delivery Service**

Your delivery truck, or car costs a lot of money. And much of this out-

lay can easily be saved by a little planning. Arrange your deliveries so that your truck goes to only one section a day, and makes only one trip a day.

Some customers will have to wait a little, but the saving of tires, gas and oil, is at least as important as saving money.

Since there are lots of other retailers who also have delivery trucks going over the same areas, it would be an economical and patriotic idea for local retailers to consolidate their deliveries and share the expense.

### **5. Sub-let Part of Your Store**

Sooner or later, as sales fall off, dealers will have no practical use for the expensive space once needed as a sales floor. In this space, for which you pay rent, but no longer require, is another source of expense reduction. There are other small business men who themselves either have too much space or less well-located space, who

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## 16 WAYS TO CONTROL AND REDUCE EXPENSES

1. Prepare a budget.
2. Check system, methods, practices. Eliminate each which does not more than pay its way.
3. Reduce sales and office force.
4. Consolidate your delivery service.
5. Sub-let part of your store.
6. Get together with others like yourself.
7. Take less expensive store.
8. Renew lease on "Per-cent-of-Sales" Basis.
9. Turn off your window lights.
10. Put 2-to-1 flasher on electric signs.
11. Go on a Cash basis.
12. Advertise "Service."
13. Eliminate night hours.
14. Buy only equipment that saves money.
15. Fill in service dept. time renovating trade-ins for sale.
16. Make a game of "beating the budget."

---

# Amputate, too!

would be glad to sub-lease a part of your store space. This is being done in large cities and small towns, by many different lines of retail business.

### **6. Get Together With Others**

In almost every town there are many small businesses which would be much more healthy if they were to combine. And now there is a pressing need to save expense, too. It is entirely appropriate to consolidate your business—merge it, with another, save money for both and have a better business, too.

Look around you, at the music dealer, hardware dealer, electrician, gift shop, stationer, furniture dealer, appliance dealer. How many of them, do you think, do not have the same problems you do.

Why not talk it over with them and among them is apt to be one who also sees how he will be better off by sharing his troubles and his business with you.

### **7. Take a less Expensive Store**

If merging your business with an-

other seems too drastic and your pride refuses you permission to sub-let part of your store, then you should give serious consideration to taking a smaller, less expensive store as soon as you can, and cut your needless rent expense in that way.

Bear in mind that rent is usually based upon the traffic density of the location. Radio dealers who battle this problem through to the end, no longer require a high traffic location, or as much space as heretofore. You can neither justify the location if it does not provide the business, or afford the rent when it becomes disproportionate to sales.

### **8. Renew Lease "on Sales" Basis**

Most dealers will prefer to sub-let a part of their store now and have their good location ready for the days of peace and good business which must come. If your lease expires soon, negotiate a renewal on a "percentage-of-sales" basis. That is, the amount of rent you will agree to pay will depend upon the volume of goods sold.

It is common practice, sound economics, and good business for both landlord and tenant, in the long run.

### **9. Turn Off Your Window Lights**

Show windows in a high traffic location are the "eye-ways" to your store. But in war time they are a menace to a blackout—and can hardly help you sell merchandise you do not have for sale. So turn off your display window lights and save the "juice."

### **10. Put 2-to-1 Flasher on Electric Sign**

You can also cut down the cost of your large electric signs by 60 per cent—with a 2-to-1 flasher, which you can buy for little, or make for less. Such a flasher should turn your signs on and off—being off twice as long as on. An "on 10, off 20" or "on 15, off 30" second cycle is practical, and even more effective than a steady sign.

### **11. Go on a Cash Basis**

Your "bad debts" may only amount to 1 per cent but if you have to borrow money to operate, while you loan your own money to your customers, it costs you more than you think, to give credit. You can save money, headaches and heartaches, if you go on a cash basis.

(Continued on page 22)

# Records Limited

**WPB order limits shellac and starts new trends**

• Outwardly the record business continues on its brisk way with national promotions still in evidence and wartime demand on the upswing. But inwardly there was considerable disturbance over the order from the War Production Board, limiting the amount of shellac available for disc manufacture.

The upshot of the order was that "during the period from the effective date hereof (April 14) to June 30, 1942, and during each calendar quarter thereafter, any person may consume shellac in the manufacture of recording and transcription materials in an amount not to exceed 30 per cent of the amount of shellac consumed in such manufacture by such person during the corresponding period of 1941." Inventories of 10,000 lbs. or over were frozen to the extent of 50 per cent.

Immediate speculation began as to what effect this would have on such matters as summer deliveries, new emphasis on certain types of records, development of substitutes, reclaiming old records, etc. Efforts of the editors of this magazine to get new-policy statements from the manufacturers revealed only that most of them

were still studying the WPB order, and had not outlined new steps.

However, discussion in the trade indicated that, in general, the industry would accent higher priced discs; that duplication of popular tunes would be eliminated and some minor artists dropped; that substitutes could be developed of sufficient quality to interest the public; that everybody in the business would begin to emphasize the value of old records of the non-laminated type.

## **New Trends**

Details on some new plans for gathering up old records will probably be announced shortly. This is of special interest to dealers because their stores are naturally the depots for large-scale turn-ins. There were nearly 315,000-000 records sold in the last five years, not counting any of the terrific sales of 1942, and what the resourceful manufacturers can do with the reclaimable part of this mass of shellac, will considerably improve the picture for the retailer.

RCA Victor had already undertaken a nationwide reclaiming of old records before the WPB order was issued. The millions of people who have non-active

records lying around in their attics, basements, and storage areas, have already had some indication that they should drag them out for the emergency.

## **Just the Hits**

One record manufacturer, the Classic Record Co., 2 W. 46th St., New York City, has announced that it will continue its 35c Elite label, and will emphasize its new "Hit" disc at 50c. Eli E. Oberstein, a Classic executive, says that "since we concentrated on the hit (every side a hit) merchandise, we will continue this policy and put out few releases and make every record a salable one." He estimates that deliveries will settle down to around 50 to 75 per cent of last year. Classic also offers a 10 in. classical Concertone record at 50c, and a 12 in. Concertone classical at 75c.

Another executive of the Classic firm, A. E. Middleman of the Pittsburgh, Pa., offices at 524 Penn Ave., adds that "we are augmenting our list of recording artists, but we do not intend to drop any of our present orchestras." He reveals also that Classic is announcing several campaigns on scrap records.

## **Immediate Jobs**

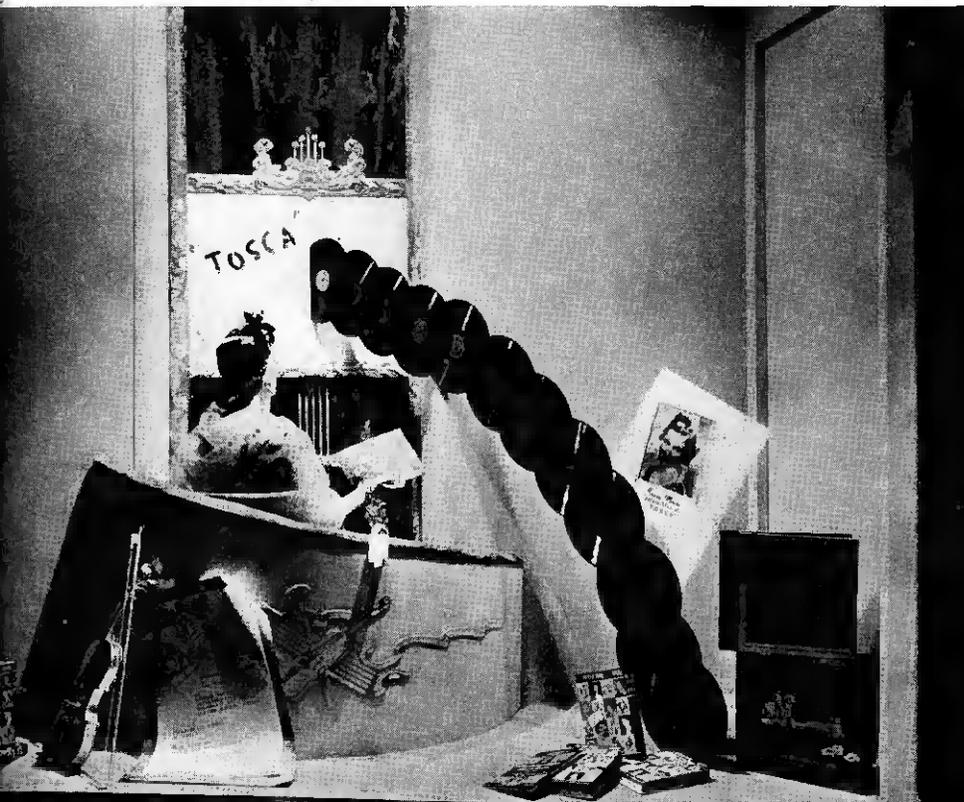
Meanwhile, there are several steps that a record retailer can take, to get set for the new situation. In the first place, he should keep up his record promotion within reasonable limits, and cut out all of those bargain sales. This is no time for an exhibition of distress merchandise.

Certainly this is an excellent time for a dealer to merchandise all those accessories which contribute to the long life of records. Folks will be interested in this, sure enough, if there are to be fewer records on the market.

A retailer should also keep in closer touch with his local jobber. Things are moving so fast that a retailer must keep on his toes and get all the news from his immediate source of supply.

In his contacts with record buyers, the dealer should immediately establish himself as headquarters for old records. His customers should have the idea that he will be offering the best values available, and that he stands right in the thick of the effort to help his country and his industry by being headquarters for useful materials.

**Classical records of the operatic class is one group of discs to get a heavier play as a result of limited production of records . . . they mean more profit per unit. Red Seal records here are displayed at the A. Harris store, Dallas, Tex., as a tie-in with a broadcast of the opera "Tosca."**

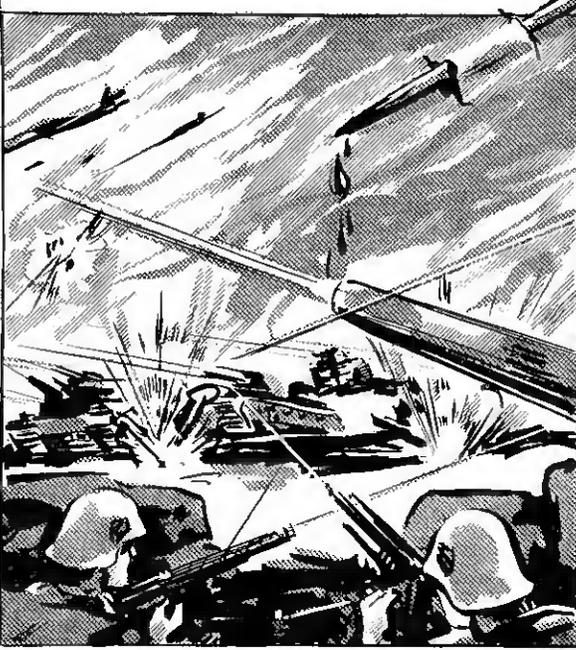


FAMILY ALBUM 1942



*In peacetime it was  
WILCOX-GAY RECORDIO  
for the pursuit of  
happiness*

Laval's Ris



*In wartime it is  
WILCOX-GAY  
INSTRUMENTS  
for the pursuit  
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Here Are the Blackout Rules

WILCOX-GAY CORPORATION

CHARLOTTE, MICHIGAN

"Producing for war . . . planning for peace"

# "The REPS" at War



A rep makes more calls—and faster ones—during these months when speed is the new keynote in the placing of orders for radio products.

• Where does the manufacturer's agent stand in the war picture? Has he revamped his business methods? How does he fit into the new war production plans?

For the answers to these questions, on another important branch of radio parts distribution, RADIO RETAILING TODAY has gone to a veteran "rep" who finds himself in the thick of wartime demands. He's David Sonkin, who has for many years been the national secretary of "The Representatives," radio's nationwide organization of agents.

## Work Faster

Fundamentally, a rep's job is to sell radio parts to clients who buy in large quantities. But in a sense, the lessons now being learned by these men apply to anyone in the business of dispensing parts, in large quantities or small. Many of the agents handle other lines besides radio parts, of course, but their combined activities may still be regarded as an illustration of the new tempo in distribution.

What the representative must do, these days, is to smooth out the route that runs from his source of supply to his customers. Conditions demand that things go more swiftly along that

route. The key word in 1942 is speed.

A rep should now adopt the practice of taking the order first, and working from that. He gets better results if he confronts his supplier with a definite order, rather than a conditional agreement from his client to the effect that "I'll order the parts if you can get me the '10' series by June 1st."

With the definite order in hand, it will often be found that all the production factors will work more efficiently to fill it. The rep's contact with the supplier should be so close and so sensitive these days that he should know exactly how these factors will function under various circumstances.

## Adapt if Possible

It often happens, however, that standard stocks can be adapted to meet rush requirements, even if the "specs" seem to forbid it, to start with. Everybody realizes that manufacturers' molds are, as one of them put it, "not made of cream cheese." New and special products cannot be turned out overnight. Reasonable concessions are being made.

In a situation like this, it will be seen that a rep should be specially re-

sourceful. It will help if he is a well-grounded technician who understands the conditions operating around his product as well as in it.

## Need to Circulate

This brand of activity indicates a lot more personal running around on the part of the rep. More of the "on the lot" activity and less of the sitting at a desk. The take-it easy days of leisurely correspondence are gone, along with a lot of the other pre-war practices.

As far as office work is concerned, it should make an extra attempt to keep up-to-the-minute files of factory prices and delivery conditions. The office should keep in mind that the supplier is up to his neck in production problems, and that the traveling rep needs the latest bulletins in his pocket.

If he takes all these tips, the rep should begin to notice that he is being given more responsibility, both by the suppliers and by those who use his services. Each of his customers will regard him as a technical advisor, almost as though he were a part-time member of the staff. They will have more confidence in the rep, at a time when such a feeling is important to radio's war effort.

---

## COMMUNIQUE TO REPS

1. On each job, take the order first.
  2. Learn how to adapt and utilize stocks already on hand.
  3. Keep up to the minute on what designs are to be frozen.
  4. Give more careful study to specifications on every job.
  5. Maintain closer contact with manufacturers.
  6. Spend more time out of the office.
  7. Expand the technical services.
  8. Recognize the vital element of time in all of today's biz.
  9. Keep complete delivery and price information at hand.
  10. Build up customer confidence in quick service.
  11. Review all past experience and errors; correct them for emergency times.
-



H. L. M. CAPRON,  
Merchandising Editor

**CAP SAYS:—**

**LOOK THE SITUATION IN  
THE EYE—AND LICK IT!**

- In recent months, many people—including all too many radio dealers—have let their hopes guide their actions.
- Even with war fast closing in on them from all sides, these people had hoped to do “business-as-usual.” And have tried to realize their hopes.
- But this war we are in is a “total war.”
- A democratic war, in which soldier and civilian, man, woman and child, rich and poor, must serve, and suffer together.
- Radio, too, has been called to the colors!
- And radio will measure up to the need of time.
- While the contribution of the manufacturer will be direct and measurable, the role of the radio dealer will be less direct.
- While the manufacturer is striving for new and greater production records, the radio dealer must fight for his business existence.
- Many radio dealers will inevitably fail to measure up and will fall by the wayside, for these are times which try the souls of men, and prove their abilities.
- But determined, alert dealers can and will measure up to current demands.
- They will tighten their belts, look the situation squarely in the eye, and lick it!

**You'll Have to  
Amputate, Too**

*(Continued from page 17)*

**12. Advertise “Service”**

Cutting expense can't save your business if you don't have sales. And advertising produces sales. But advertising which does not produce sales is an expense, a reducible expense. And so you should subject your advertising to a searching investigation. Any advertising which does not pay its own way by creating good will, or in profits of the sales it creates, should certainly be discontinued.

Since much of your future depends upon your Service Department, you can justify some Service Department advertising for its cumulative and future value, but even this should be carefully checked.

**13. Eliminate Night Hours**

Night operations of your store are expensive in operating costs—for lights, heat, personnel. Unless your

night sales are very good, and cannot be transferred to day sales, night operation should be discontinued.

Even in good times, stores with good night sales, still found that very, very little of this night business was lost when they closed at nights. It could be, and was, transferred to day-time business.

**14. Buy Only Equipment  
That Saves Money**

While you are closely inspecting expense, you cannot well afford to overlook similar scrutiny of capital expenditures.

Improvements should be discontinued. And only such machines or equipment as can and will actually save money should even be given a second thought.

**15. Rebuild Trade-ins**

Every employee must work all the time and particularly the Service Department, which must now carry a larger share of the sales load than

usual, must make every hour productive.

This you can do by careful planning. In the Service Department an excellent idea now widely used is to have trade-in and other used sets always awaiting renewal in the Service Department to be worked on whenever other work slackens.

**16. “Beat the Budget”**

There are other ways, too, to reduce expense, many of which you will think of, and practice.

An excellent idea is to make a game of “beating the budget.”

Let every co-worker play the game. Keep score. Pay some small token prize for every usable suggestion. Each month, tally your “scores” and give some recognition for those who win. During the summer, score on a baseball basis.

The spirit of friendly competition will do much to keep all your co-workers' minds “expense conscious.”

The “scoreboard” will keep it constantly before them. And results may be as surprising to you as they have been to many others.

RADIO RETAILING TODAY is anxious to help all dealers help themselves.

You are invited to write in any expense reduction ideas or methods you have found effective. Such letters will be printed for the benefit of all dealers.

**How New Price Ceilings  
Affect Dealers**

As the General Price Maximum Regulation swung into action, the OPA revoked the temporary regulation on radios which was issued earlier, and released new instructions for retailers. Three important “do's” came from OPA, indicating immediate steps in getting ready for the May 18 effective date of the General Regulation. These were as follows:

(1) Assemble and preserve immediately all your records regarding all prices charged for goods in March. In addition, begin preparing your statement of highest base period prices for each item sold, so that it will be completed by July 1, 1942.

(2) Check prices of all goods in your store to be sure that they are no higher than the highest prices charged in March, 1942. This job must be completed by May 18, after which time you cannot exceed these maximum prices.

(3) Arrange to post or mark and identify as “ceiling price” or “our ceiling,” your maximum prices on all “cost-of-living” commodities specified in Appendix A of the Regulation. This must be finished by May 18. In ad-

## Washington Expert



James H. Simon, prominent jobber of Washington, D. C., who has been serving as radio's key man in the Office of Price Administration, has announced that he will now leave that post. Mr. Simon is credited with much expert work on civilian radio rulings when OPA first faced the huge problems of price regulation.

dition, a list of these items and their ceiling prices must be filed with the War Price and Rationing Board in your area by June 1, 1942.

OPA advised retailers *not* to bring their problems to Washington personally, *not* to telephone the Washington administrators, and *not* to write in before the Regulation has been carefully read and re-read. "Troubleshooters" from OPA's Retail Trade and Services Division are preparing a bulletin of explanations on matters most frequently asked about.

As for the retail licensing provision of the General Regulation, OPA points out that the purpose of the license is to give OPA a basis for action against stores which refuse to conform. OPA may ask a court to suspend the license as long as 12 months. Every retail and wholesale outfit is automatically licensed to sell under the Regulation at the date the ceiling applies to it.

Price ceilings established by the Regulation apply to radio repair charges, as well as to the sale of new or reconditioned sets.

### Sylvania Opens Another Plant

Hygrade Sylvania Corp. has purchased a new plant at Mill Hall, Pa., and is now grooming it for the manufacture of radio tubes. Actual operation will start within a few months.

**GLASS MASTER  
DISCS  
NOW READY  
FOR DELIVERY**



Presto 17 1/4" Glass Base Master discs are now in stock awaiting your order. Transcription manufacturers have been processing samples of the Presto Glass Master for several months and report it perfect in every respect, easily adapted to their plating equipment, thick enough (.135") for safe handling and having the exceptionally quiet surface characteristic of all Presto discs.

The Presto 17 1/4" Master is made

in two styles. Type 917-D has a removable metal center insert to allow its use with overhead cutting mechanisms driven from the center of the turntable. The 917-E has a solid insert for tables having independent cutting head drive (Presto 8-C).

Priced only slightly higher than previous aluminum master discs. Sold by Graybar Electric Company and leading radio parts distributors throughout the United States and Canada.

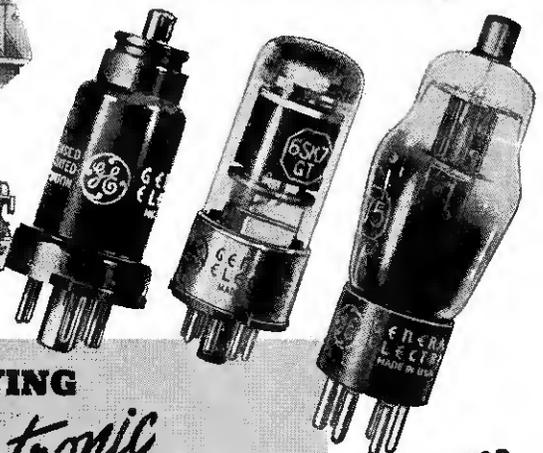
**PRESTO  
RECORDING CORP.**  
242 WEST 55th ST. N.Y.

In Other Cities, Phone... ATLANTA, Jack. 4372 • BOSTON, Bel. 4510  
CHICAGO, Har. 4240 • CLEVELAND, Me. 1565 • DALLAS, 37093 • DENVER,  
Ch. 4277 • DETROIT, Univ. 1-0180 • HOLLYWOOD, Hil. 9133 • KANSAS  
CITY, Vic. 4631 • MINNEAPOLIS, Atlantic 4216 • MONTREAL, Wel. 4218  
PHILADELPHIA, Penny. 0542 • ROCHESTER, Col. 3548 • SAN FRANCISCO,  
Yu. 0231 • SEATTLE, Sen. 2560 • WASHINGTON, D. C., Shep. 4003

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

## KEEP A BALANCED TUBE STOCK ALWAYS ON HAND

Win Customer Goodwill  
With Quick Service



**KEEP 'EM PLAYING**

WITH



*Electronic*

**RADIO  
TUBES**

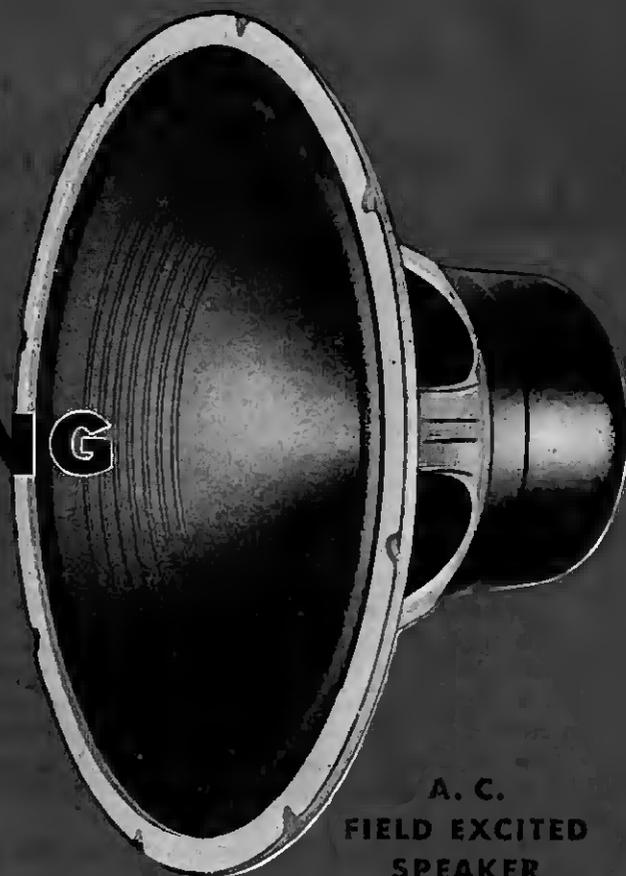
FAMOUS FOR  
LONG LIFE AND  
FINE RECEPTION

**GENERAL ELECTRIC**

# DEVELOPMENTS IN SOUND ENGINEERING

BY

**Utah**



A. C.  
FIELD EXCITED  
SPEAKER



● A typical result of Utah's ingenuity and ability to meet changing requirements is the new Utah A.C. Field Excited Speaker. In anticipation of the critical shortages of raw

materials needed for the fabrication of permanent speakers, it was necessary to develop a new line of substitute speakers. Utah's solution to the problem has all the dependability and high satisfaction of the line of which it becomes a part.

These new Utah speakers have standard Utah weather resistance. They are humless in operation and equivalent in

performance to the famous Utah Permo-Dynamic line. A speaker has been designed for every public address and sound requirement. They require only the addition of the A.C. Field Supply shown at the left—to substitute for any Permo-Dynamic application. The Field Supply is properly designed for humless operation of any of the new Field Excited Speakers. The supply may be mounted directly in the speaker baffle.



*New Utah A. C. Field Excitation Supply. At 117 volts, 60 cycle input, the maximum output is 12 watts at 105 mills.*

Look for the Utah trademark. Utah Radio Products Company, Address: 810 Orleans Street, Chicago, Illinois. Canadian Offices: 560 King Street, West, Toronto. In Argentina: Ucoa Radio Products Company, SRL, Buenos Aires. Cable Address: Utaradio, Chicago.

**Utah**

**S P E A K E R S**  
VIBRATORS • TRANSFORMERS • UTAH-CARTER PARTS



## At 400 miles per hour

You'd Appreciate Metal Tubes!

A POWER DIVE in a pursuit plane is something to write home about! Your engines roar...the wind shrieks and screams...the airspeed indicator climbs past 300, 350, 400, toward terminal velocity. As you ease back on the stick to pull her out, enormous stresses wrench at the vitals of the plane—and at every piece of equipment inside!

Is it any wonder that both the Army and the Navy specify *metal* tubes

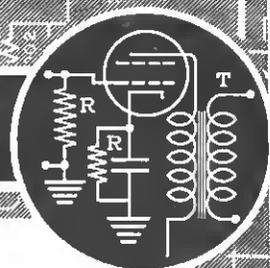
for military radio equipment—? Or that RCA is now turning out metal tubes at the fastest pace in our history—? For metal tubes combine extreme ruggedness with positive socket-contact (at the *pins*, where contact *should* be!) along with lower interelectrode-capacitances, greater

compactness, and efficient self-shielding. Only metal tubes can give the *advantages* of metal tubes!

With enormous quantities of RCA Metal Tubes going into equipment for the Democracies, you may experience difficulty or delay in the shipment of *your* orders for non-war purposes. Please be patient. For military equipment *comes first*... and military equipment needs *metal* tubes!



## METAL TUBES



## Home Service vs. Shop Service

Servicemen some days ago found themselves shoved into the midst of the age-old battle about repairing the set in the home vs. "pulling the chassis" for a shop job. Just when this subject was resting peacefully in each serviceman's policy of handling his jobs, along come some words of advice from Washington for consumption by the general public.

In a statement for consumers from the Office of Price Administration, radio-set owners were advised to do certain things to insure the operation of their sets for the duration. Due to the widespread publicity given in newspapers to this statement by the OPA, servicemen should be prepared to cope with it.

### *Most Suggestions Good*

Most of the suggestions were good. Owners were advised to allow for air circulation around their sets, to check the line cord for good contacts, to see that ground and antenna leads were not broken or loose, to see that tubes were firmly in their sockets, to clean the dust from the set with a small hand vacuum-cleaner. It was further advised that a radio repairman be called if the set were still unsatisfactory.

These suggestions are commendable. They can do much to save time and tires in "fixing" Mrs. Jones' set because the plug was pulled out during a flurry of housecleaning!

However, in the same breath the OPA further states. . . "Insist that he (radio serviceman) fix the set at your home. Most service firms have portable testing and repair equipment for home calls."

Of course if Mrs. Smith insists you can always use her new double boiler and kitchen stove to melt the pitch out of the can which contains the power transformer, filter choke, three RF coils, and the tuning condenser—the exact replacement for which is no longer being made, in her Super XYZ model.

In spite of the laughability of the situations which could arise if householders insisted on having every type of repair job done in their own homes, servicemen should not be too hasty in "pulling the set" when it is possible for them to do the job in the home conveniently and gracefully.

### *Plan Your Service Calls*

In these days of tire and gasoline shortages don't rush across town to pick up a set, bring it back, put in a tube, and haul it back to the customer. There is one unnecessary round trip in that method. Where to draw the line on doing jobs in the home and in the shop depends upon the business set-up of each individual serviceman. When it is a toss-up, explain what is involved in making the repair and let the customer be the judge as to whether the set shall be fixed in the home or not.

On those jobs which must be done in the shop, you're the doctor. Few set owners will fail to see your point if you tell them that it is unfair and unpatriotic for you to gamble your ability to keep the radios of your other customers working—and if they ever needed them, they need them now—through risking damage to hundreds of dollars worth of delicate and now unreplaceable test equipment, just to fix the set in their home.

Even when you have to bring the set to the shop you can help yourself and your country by routing your calls and deliveries. If you get a call from "across town" early in the morning, plan to make the visit late in the day. The chances are you will get other calls in the general vicinity and save unnecessary long trips.

Further comment by the radio trade on this OPA statement on "home repairs" will be found on following pages.

# Auto Radio Service

## Basic facts on vibrator power supplies, installation, noise elimination and features of new circuits.

With more than 10 million auto radios in use today, and over 20 million cars and trucks still without sets, the service and installation market is very great. While it is true that in some instances the volume of motoring has been reduced, most of this traffic has been of the pleasure variety. The majority of the business uses of automobiles continues.

The servicing of auto sets calls for extra knowledge and experience in two classifications: (1) vibrator power supplies, and (2) installation and noise elimination. These two subjects are not often encountered in ordinary home set service work. They are factors on nearly every auto radio job.

Vibrator power supplies are often skipped over by some servicemen because of a lack of understanding as to what makes 'em work.

The purpose of the vibrator type power supply is to convert the 6-volt (usually) DC to high voltage DC for application to the plates of the tubes. To do this it is necessary to change the direct battery current into a pulsating or alternating current after which the step-up properties of a transformer can be used. The stepped-up pulsating voltage can then be rectified and filtered to the required DC.

### Vibrating Switch

The problem of changing the direct current into pulsating or alternating current is accomplished by a relay-type switch—the vibrator. This device in its simplest form is a single pole double throw switch which is shifted from one position to the other by an electro-magnet. The current to operate the electro-magnet comes, of course, from the battery and it is switched off and on by a separate contact carried on the moving blade of the switch. Thus the moving blade is vibrated between the two contact positions much as the clapper of a door bell is moved back and forth. Fig. 1 shows the electrical circuit for a non-synchronous vibrator and Fig. 1B shows a synchronous unit. The difference between the two types of vibrators is an extra pair of contacts for the purpose of rectifying the current from the secondary side of the transformer. Thus the synchronous vibrator is made to do two jobs at once; invert the DC from the battery to pulsating AC and rectify it back to DC.

The rest of the power supply consists of a power transformer, buffer condensers, a rectifier (if synchronous vibrator is not used) and the filtering system. The power transformer has a double primary of two 6-volt sections connected in series. The battery current is sent through each primary section in turn by the vibrator. The secondary winding of the transformer is the usual high voltage winding common to other types of radio power units.

### Transforming and Rectifying

If the self-rectifying or synchronous type of vibrator is not used, either a gas filled no-filament type rectifier (0Z4) or a regular thermionic tube is used.

Since the vibrator serves only to switch the direct battery current through each section of the primary winding in turn, the current that flows through the winding during the time the vibrator contacts are in one position is nearly a constant or direct current value. Because the contacts cannot be in two places at the same time, there is a period while the vibrating reed is moving from one set of contacts to the other that the current through the primary is zero. The ratio of the time that the

contacts remain in the "make" position to the total time for one cycle is the time efficiency of the vibrator and for modern units this efficiency is between 80 and 90 per cent. The frequency of vibrator is usually in the vicinity of 115 cycles per second.

### Induced Peaks

If some shunting or damping action were not used across the windings of the power transformer, the sudden breaking of the contacts of the vibrator would cause a high voltage to be developed in the windings since the rapidly decaying flux would induce that voltage. The voltage across the secondary of the transformer could rise to a value several times its normal magnitude and thus damage the rectifier and filter system. To prevent this abnormal voltage from developing during the breaking of the primary vibrator contacts, a buffer or "timing capacity" is placed across either the primary or the secondary, usually the latter. The size of this capacity is determined by the characteristics of the vibrator, transformer and load system. Its purpose is to prevent the excessive voltage peaks by opposing any change in voltage when the primary contacts are broken.

The value of the timing or buffer

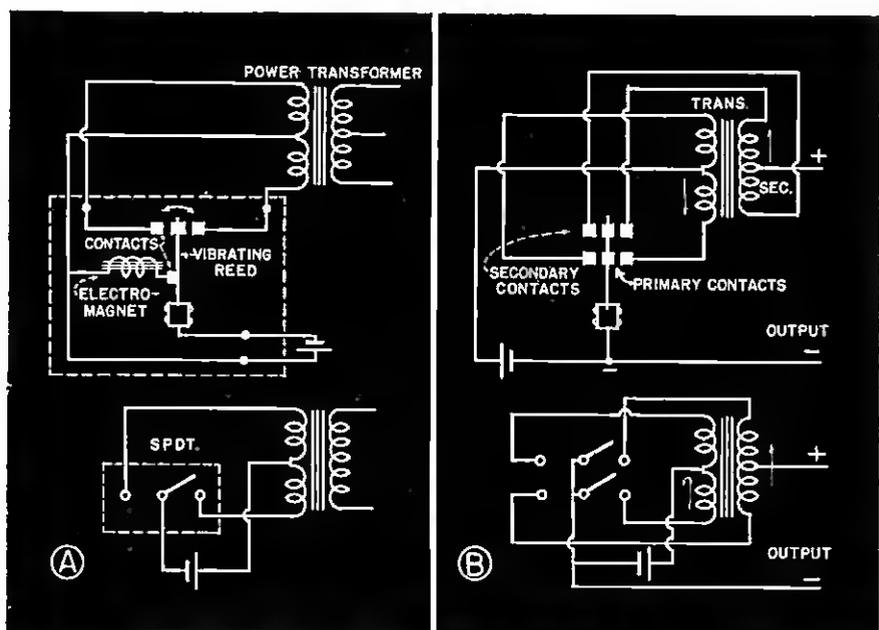


Fig. 1.—Interrupter and synchronous vibrator circuits are shown in A and B respectively. An electrically equivalent switch circuit is shown below each type vibrator.

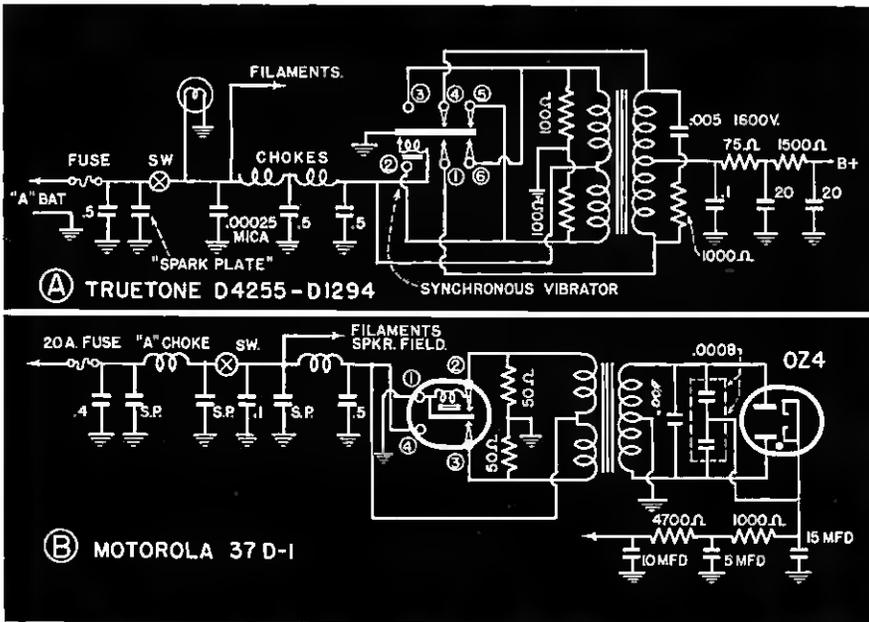


Fig. 2—Two typical auto radio power supply circuits with A employing a self-rectifying type of vibrator and B a separate vacuum tube rectifier. Note protective and noise reducing resistors in primary circuit.

capacity is very important to the proper functioning of the vibrator power supply. The value recommended for the set should be used unless it becomes necessary to change the vibrator type or power transformer. If this is done, the buffer capacity should be adjusted to give a voltage waveform, as viewed on an oscilloscope, as symmetrical and free from sharp peaks as possible. The typical waveform should have sloping sides and a flat top. Both the positive and negative half-cycles should be as nearly alike as possible.

**Buffer Sizes**

If the buffer capacity is too small it will not do the best job of keeping excessive voltage peaks out of the system. If the capacity is too large, the input current from the battery will be higher than necessary and therefore detract from the normal life of the vibrator contacts.

One of the best tests for vibrators is its starting voltage. That is the voltage at which the vibrator goes into operation by itself. A "good" vibrator will start at 5.2 volts or less. If 5.2 to 5.6 volts are required to start the vibrator, it is probably close to the end of its life. If more than 5.6 volts are required to start the unit, it should be replaced. A second test for the vibrator should be the smoothness of the output voltage from a conventional rectifier and filter system under normal load. A volt-meter across the output load should register the normal voltage with very little fluctuation if the vibrator is good. Low or unsteady voltage is a sign of a bad vibrator. With all of these vibrator tests it is assumed that the other

parts of the circuit are in good condition.

**Primary Resistors**

Two typical power supply diagrams are shown in Fig. 2. Fig. 2A is the synchronous vibrator type supply used in Truetone model D4255. In addition to the buffer capacity across the secondary of the transformer, the primary is further protected against voltage peaks when the vibrator contacts are opened and closed each half-cycle, by two 100-ohm resistors connected across the two primary sections and grounded at the center. Since the center tap of the primary winding is connected to the "hot" side of the battery and the two 100-ohm resistors return their center point to the other side of the battery circuit, a small direct current will flow through the two sections of the primary at all times. The current flows through each section in opposite directions so that the net result on the flux in the core of the transformer is zero. When the vibrator contacts close, full current flows through the section of the primary connected to the contacts. When the contacts are broken, the resistors (one for each section of the primary) prevent the current from falling to zero and at the same time acts as a protective shunt for the high voltage which would develop from the rapidly falling current.

**Input Filtering**

In Fig. 2B is the power supply used in Motorola model 37D-1. Here an interrupter or non-synchronous type of vibrator is used in conjunction with a gas filled 0Z4 rectifier. Low

ohmage resistors are used across the primary for the same reasons as in the circuit of Fig 2A.

With a conventional rectifier, the center tap of the secondary is the negative lead, while in most synchronous vibrator systems the center tap is positive. The center tapped capacities across the secondary serve to by-pass high frequency hash and other noise voltages.

The input lead from the "hot" side of the battery is well filtered with inductance and capacity combinations. This is done to block the entrance of ignition noise. Since the receiver is thoroughly shielded, the "hot" A lead and the antenna are the only means of entrance, unless the set is equipped with an external speaker, tuning head or other exposed leads. Because the A lead is a part of the electrical circuit of the automobile, it carries rather high noise voltages developed mainly by the ignition system. To filter this noise out of the A lead to the receiver, a very low impedance path to ground must be provided.

**Antenna Coupling**

Because the lead inductance of ordinary capacitors is high enough to prevent the high frequency ignition noise from being by-passed effectively, a special type of by-pass capacitor known as a spark plate is now widely used to filter out ignition noise. In general it consists of a metal plate fastened to the chassis but insulated electrically. The inductance of this unit is therefore very low, since the chassis and the plate serve as their own leads.

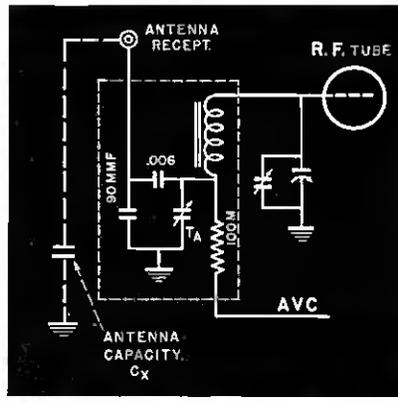


Fig. 3—Auto radio antenna coupling circuit makes the capacity of antenna and coupling lead part of tuned circuit to reduce shunt losses. See text.

The use of chokes prevent current surges in the vibrator circuit from seriously affecting the filaments, and they also isolate power supply noise voltages from the tubes.

In Fig. 3 is the antenna coupling system used on many auto sets. Due to the relative high capacity to ground (Continued on page 38)

# 349 Tubes Dropped

## WPB Order Stops Manufacture of Obsolete, and Slow-Moving Types

A long needed step in the tube industry was taken by the War Production Board when, with the cooperation of the tube makers, it dropped 349 types from the ranks of the tubes being made. These 349 types represented about half of the total types. The large percentage of them were either obsolete, slow moving, or duplicates of other construction types. About 280 of them are familiar to U. S. radio men. The balance of the

types were either proposed types never released, or foreign tubes made for export service.

Although the 349 types represented a total of less than 800,000 units per year or less than 1 per cent, the elimination of these types from the production lines will represent some saving in needed materials and plant capacity.

While these tubes will no longer be manufactured, it does not mean that

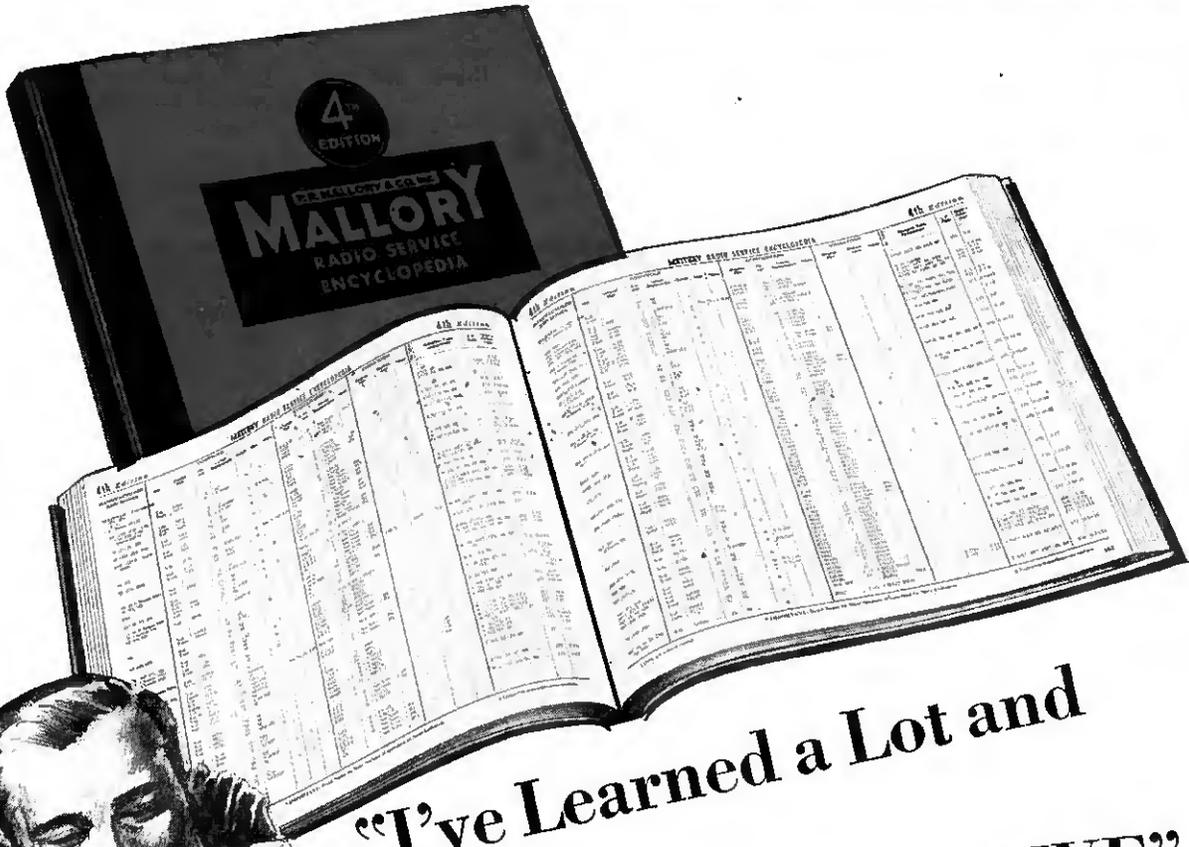
they are not available. In many cases, sufficient stocks are available in manufacturers', jobbers', and dealers' hands. They should, by all means be used as replacements whenever they are available.

The accompanying list are those types which will no longer be made less the foreign and "never released" types. The code letters following each tube refer to remarks in the explanatory table.

OOA - - - - O	1LC5 - - - - S	5W4G - - - - R	6H4G - - - - S	6Z4 - - - - G	14Y4 - - - - S	50C6G - - - - S
OZ3 - - - - O	1N1 - - - - O	5X3 - - - - O	6H5 - - - - D	6Z5 - - - - M	15 - - - - S	50L6G - - - - S
O1A - - - - S	1N5G - - - - S	5Y3G - - - - R	6H6G - - - - R	6Z5/12Z5 - - O	17 - - - - S	50Y6G - - - - R
O1AA - - - - S	1N6G - - - - S	5Z4G - - - - O	6H6MG - - - O	6Z6MG - - - O	18 - - - - S	50Z6G - - - - S
1A1 - - - - S	1N6GT - - - S	5Z4MG - - - O	6J5G - - - - R	6Z7G - - - - S	20 - - - - S	50Z7G - - - - S
1A1/5E1 - - S	1P1 - - - - O	6 - - - - S	6J5GX - - - C	7 - - - - S	22 - - - - S	51 - - - - O
1A5G - - - - R	1P5G - - - - S	6A4 - - - - O	6J7MG - - - O	7A7LM - - - H	24 - - - - O	52 - - - - S
1A7G - - - - R	1Q1 - - - - O	6A4/LA - - - S	6K6G - - - - R	7B5LT - - - H	24S - - - - M	55 - - - - S
1B1 - - - - S	1Q5G - - - - R	6A5G - - - - S	6K6MG - - - O	7B6LM - - - H	25A6 - - - - R	55S - - - - M
1B4 - - - - O	1R1G - - - - S	6A6X - - - - C	6K7MG - - - O	7B8LM - - - H	25A6G - - - R	56AS - - - - M
1B4P - - - - S	1S1G - - - - O	6A7S - - - - M	6L6GX - - - C	7C5LT - - - H	25A7G - - - R	56S - - - - M
1B4P/951 - S	1T1G - - - - S	6A8MG - - - O	6M8GT - - - O	7D7 - - - - S	25AC5G - - R	57AS - - - - M
1B7G - - - - S	1U1 - - - - O	6AB5 - - - - B	6N5 - - - - B	7G7 - - - - I	25B5 - - - - S	57S - - - - M
1B8GT - - - S	1W1 - - - - O	6AB6G - - - S	6N6 - - - - S	7R7 - - - - S	25B6G - - - S	58AS - - - - M
1C1 - - - - S	1Y1 - - - - O	6AC5G - - - R	6N6MG - - - O	8 - - - - S	25B8GT - - S	58S - - - - M
1C5G - - - - R	1Z1 - - - - O	6AC6G - - - S	6N7G - - - - S	9 - - - - S	25D8GT - - S	64 - - - - O
1D1 - - - - S	2 - - - - S	6AC6GT - - - S	6P5G - - - - R	WD11 - - - O	25L6 - - - - R	65 - - - - O
1D2 - - - - O	2A3H - - - O	6AD5G - - - O	6P7G - - - - S	WD12 - - - O	25L6G - - - R	68 - - - - O
1D7G - - - - S	2A7S - - - M	6AD6G - - - S	6Q6G - - - - E	WX12 - - - O	25N6G - - - S	69 - - - - O
1E1 - - - - S	2B6 - - - - O	6AE5G - - - S	6Q7MG - - - O	12A - - - - S	25S - - - - K	70 - - - - O
1E2 - - - - O	2B7 - - - - S	6AE5GT - - - S	6R6G - - - - S	12A5 - - - S	25X6GT - - S	70A7GT - - S
1E4G - - - - S	2B7S - - - M	6AE6G - - - S	6S6GT - - - S	12A8G - - - S	25Y4GT - - S	70L6GT - - S
1E5G - - - - O	2E5 - - - - S	6AE7GT - - - S	6SE7GT - - S	12B7 - - - - J	25Z4 - - - - S	75S - - - - M
1E5GP - - - S	2G5 - - - - O	6AF5G - - - S	6T5 - - - - D	12E5GT - - - S	25Z4GT - - S	79 - - - - S
1E5GT - - - S	2S/4S - - - M	6AF6GT - - - S	6T7G/6Q6G E	12J7G - - - S	25Z5MG - - O	85AS - - - - M
1E7G - - - - S	2W3 - - - - S	6AL6G - - - S	6U5 - - - - D	12K7G - - - S	25Z6G - - - R	89 - - - - S
1F1 - - - - S	2W3GT - - - S	6B6 - - - - O	6V6G - - - - R	12K8GT - - - S	27S - - - - M	95 - - - - O
1F7GH - - - A	2Y2 - - - - O	6B7S - - - - M	6V6GX - - - C	12Q7G - - - S	29 - - - - O	V99 - - - - S
1F7GV - - - A	2Z2 - - - - O	6B8GT - - - S	6V7G - - - - S	12SA7G - - - R	31 - - - - S	X99 - - - - S
1G1 - - - - S	2Z2/G84 - - M	6C5G - - - - R	6W5G - - - - S	12SK7G - - - S	35A5LT - - H	117L7GT - - N
1G4G - - - - R	3 - - - - S	6C5MG - - - O	6W6GT - - - S	12Z5 - - - - O	35L6G - - - R	117M7GT - - N
1G5GT/G - - S	3C5GT - - - S	6C7 - - - - M	6X5 - - - - R	14 - - - - S	35S/51S - - M	117Z6G - - - R
1G6G - - - - R	3LE4 - - - L	6D5G - - - - O	6X5G - - - - R	14A4 - - - - S	35Z3LT - - H	117Z6GC - - R
1G6GT - - - R	3Q5G - - - - R	6D5MG - - - O	6Y3G - - - - S	14A7 - - - - J	35Z5G - - - R	182B/482B - S
1H5G - - - - S	4 - - - - S	6D7 - - - - M	6Y5 - - - - M	14B6 - - - - S	35Z6GT - - S	183/483 - - S
1J1 - - - - S	4A1 - - - - S	6E6 - - - - S	6Y5GT - - - S	14B8 - - - - S	40 - - - - S	401 - - - - O
1J5G - - - - S	4A6G - - - S	6E7 - - - - M	6Y5S - - - O	14C5 - - - - S	45A - - - - O	485 - - - - S
1K1 - - - - S	5 - - - - S	6F5MG - - - O	5Y5V - - - O	14E6 - - - - S	46A1 - - - - S	950 - - - - S
1L1 - - - - O	5T4 - - - - L	6F7S - - - - M	6Y7G - - - - S	14F7 - - - - S	46B1 - - - - S	1232 - - - - I
1LB6 - - - - S	5W4 - - - - R	6G5 - - - - D	6Z3 - - - - F	14F7 - - - - S	48 - - - - S	1852 - - - - P
				14N7 - - - - S	49 - - - - S	1853 - - - - Q

### Key Letters Explaining Reasons for Tube Eliminations

- A**—Replaced by 1F7G.
- B**—Replaced by 6AB5/6N5.
- C**—Ceramic type base. Small demand.
- D**—Replaced by 6U5/6G5.
- E**—Replaced by 6T7G.
- F**—Replaced by 1V.
- G**—Replaced by 84/6Z4.
- H**—Replaced by same type with plain octal base.
- I**—Replaced by 7G7/1232.
- J**—Replaced by 14A7/12B7.
- K**—Replaced by 1B5/25S.
- L**—Used in limited number of special sets.
- M**—Special tube for some Majestic models. Small demand.
- N**—Replaced by 117L7/M7/GT.
- O**—Old style; now obsolete.
- P**—Replaced by 6AC7/1852.
- Q**—Replaced by 6AB7/1853.
- R**—Replaced by GT or GT/G construction, or by equivalent metal type.
- S**—Small demand. Total of these types less than 1 per cent of total yearly sales.



**"I've Learned a Lot and Saved a Lot with my MYE"**

That's what a young radio serviceman who's just "getting his feet wet" in the business told us recently. He's found his Fourth Edition "MYE", the Mallory Radio Service Encyclopedia, a valuable instruction manual and an invaluable time-and-money saver.

For instance, both veteran and "rookie" radio servicemen have learned that it pays to keep a copy of the "MYE" on counter or workbench, right near the telephone. When a hurry call comes in for service on *any* model of *any* make of receiver, it's easy to look up circuits, original part numbers and recommended replacements for volume controls, condensers and vibrators. All this data for any set can usually be found in one compact listing, on one page of the "MYE"!

Also, if a detailed inspection of the entire schematic is necessary, you can quickly refer to your "MYE" for the tube complement, the I.F. peak and the Rider's Reference.

Ask any radio serviceman who has bought one. He'll tell you how he uses his Fourth Edition "MYE" every day to save time and money. This "MYE" is worth many times its nominal price. Get *your* copy today from your Mallory Distributor!

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# MALLORY

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**P. R. MALLORY & CO., Inc.**  
 INDIANAPOLIS INDIANA  
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**Philco C-1908  
Auto Radio Circuit**

Permeability tuning is used in the auto radio model C-1908 made by Philco for Chrysler, Desoto, Dodge, and Plymouth cars. In addition to the moving cores used for manual tuning, the five push-buttons are also permeability tuned. Circuit for this set is shown.

The coupling between the first RF tube and the converter is fixed tuned. A series trap in the converter grid circuit is tuned to reject interference at the intermediate frequency. The manual and push-button oscillator grid circuit coils are shunted in parallel with a fixed tuned oscillator coil which has the feedback winding.

The set has a conventional AVC system and also a sensitivity control in the cathode circuit of the RF and converter tubes. A feedback tone control circuit is employed between the secondary of the output transformer and the grid circuit of the 7A4 phase inverter. The inverter circuit uses the divided plate load circuit with half the load resistance in the cathode circuit.

**Circuit Alignment**

To align the IF transformers, connect the signal generator through a 0.1 mfd. capacitor to the antenna receptacle and with the tuning dial

turned to the complete clockwise position, align the trimmers 40, 38, 32, and 30 to 455 KC. Repeat for best results.

With the signal generator connected as before, adjust the trap trimmer for minimum response to 455 kc. This trimmer is located in the top of the RF coil can.

The RF end of the set is adjusted at 1500 kc. and at 580 kc. The signal generator should be connected to the antenna receptacle through a 25 mmfd. capacitor and dummy antenna such as Philco part No. 95-0111. At 1500 kc., adjust the RF trimmer 17 alongside the antenna receptacle. At 580 kc. adjust the iron core in the fixed oscillator coil while rocking the tuning condenser.

When the set is installed in the car, the RF end should be realigned at 1500 kc. and 580 kc. as mentioned before but with the signal radiated from a piece of wire and the car antenna mounted and connected to the set.

**Shop Service vs.  
Home Service Opinions  
From the Trade**

The reaction to the suggestions made by the OPA for the repairing of radios has brought forth considerable criticism. (See general story on page 25.)

The following letter is a copy of

the one sent by the Radio Technicians' Association of Long Beach, California, to a local newspaper which printed the OPA advice to radio set owners.

Editor  
Long Beach Independent

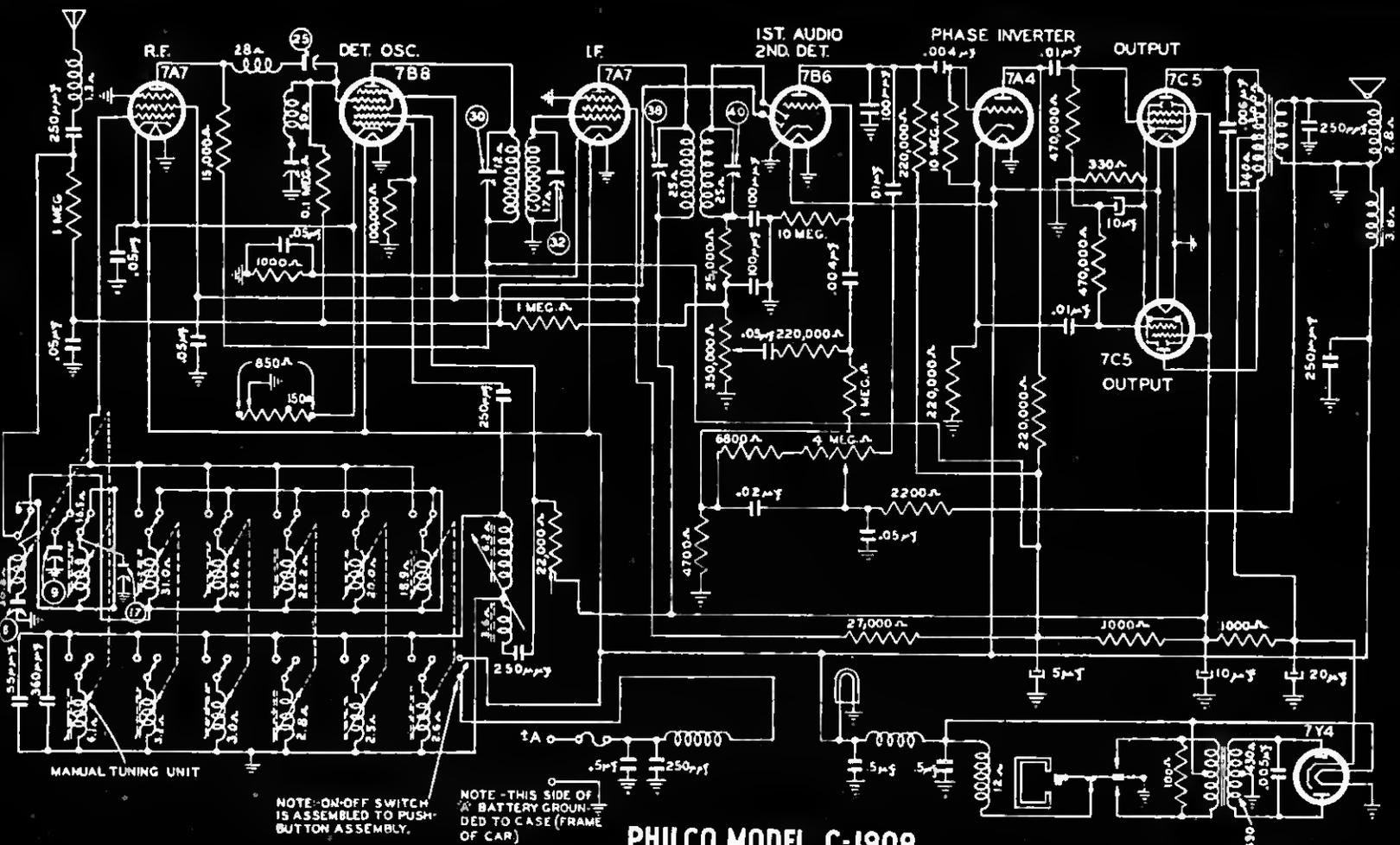
Dear Sir:

In regard to your recent article on radio and radio service, published April 10, it seems to me that an outstanding paper such as the Independent would investigate existing laws and general conditions before publishing an article of this nature. You have caused the radio dealers and servicemen, through this article, no end of trouble. I would like very much for a retraction or correction to be published to offset such outlandish statements.

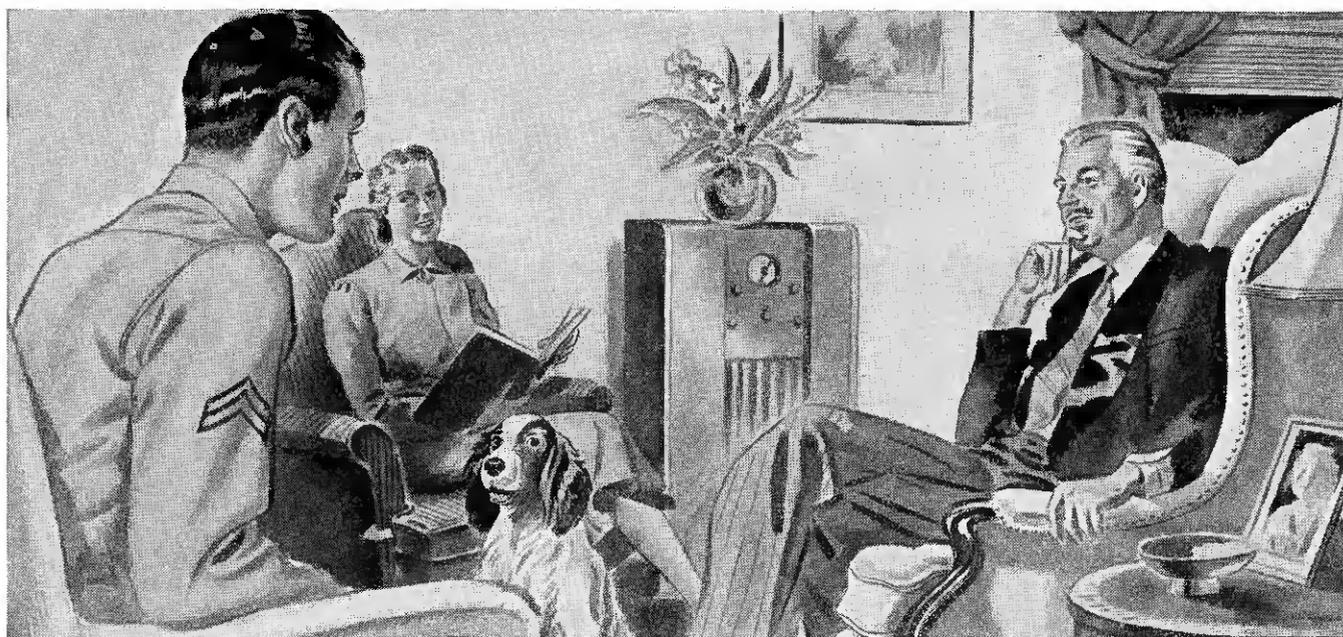
In the first place, we are working under a terrific handicap. We cannot take our radio test equipment, which in most stores is valued up to \$1,000.00, to any home to check a radio. One instrument used, a channelyst, checks to a micro-volt one-millionth part of a volt. If this instrument is damaged or broken, replacements are not allowed for the duration.

We have been given orders that all radio parts removed from radio chassis must be returned in order for us to procure a new supply, which is the reverse of your published statement.

It seems to me if you were to do  
(Continued on page 33)



**PHILCO MODEL C-1908**  
I.F. = 455KC



## WHAT ABOUT RESISTORS AND CONTROLS FOR THE HOME FRONT?

### *A Statement Regarding the IRC War Effort and Its Effect on Normal Production*

As a natural consequence of unquestioned leadership in its field, IRC has been called upon to provide fixed and variable resistors for war requirements to an extent which has absorbed a large part of its production capacity. This war demand has steadily increased and has exceeded all expectations. Naturally, this is a tremendous responsibility that we cannot neglect.

Nevertheless, we have by no means forgotten the important requirements of service men and jobbers. We have wanted for some time to make a definite statement concerning our ability to supply replacement parts. This has been impossible since there was no means of knowing the extent of the war demands, and no definite provision has been made to insure a supply of critical materials for radio servicing requirements.

The national authorities in charge of this most difficult task of allotting critical materials for the greatest good of our Nation fully recognize the importance of radio repair and maintenance but, up to now, urgent war production has rightfully had priority over all else. As soon as these authorities decide upon definite plans for the allotment of materials for replacement parts, we shall relay these plans to you.



Meanwhile, we state definitely:

*That IRC realizes fully the importance of keeping the Nation's old radios in perfect working order during the emergency.*

*That IRC thoroughly recognizes its obligation to keep jobbers and service men supplied with dependable replacement parts.*

*That IRC pledges itself to fulfill its obligation to the utmost, within the limits permitted by authorization of critical materials.*

If deliveries have at times been slow, or if you have found an occasional unit missing from jobbers' stocks, we know that you will understand. You will realize that any failure to deliver goods on the home front is only because we have recognized that there *must* be no failure to deliver them on the war front.

Obviously, all replacement parts production will be faced with many difficulties arising from the war. Through participation in the "Production Requirements Plan" now being expanded to cover replacement parts, plus full utilization of our greatly enlarged manufacturing facilities, IRC hopes to be in a position to handle all legitimate requirements.

*The home front has not been forgotten.*

We'll do our level best to meet its needs!

**INTERNATIONAL RESISTANCE COMPANY** 401 NORTH BROAD ST. PHILADELPHIA, PA.

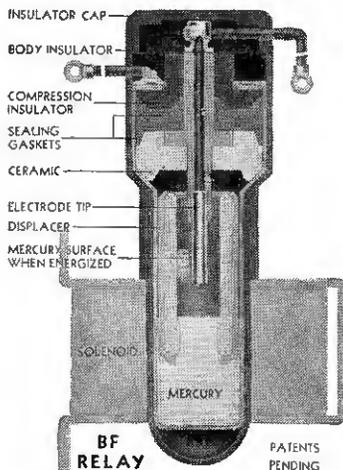


# New Equipment



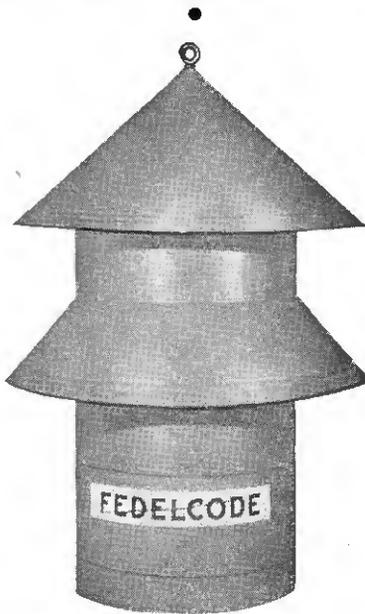
**SPRAGUE TYPE WR** tubular cardboard dry electrolytics replace wet capacitors and also various aluminum can dry types. Have high voltage formation to insure their standing up under the high peak voltages impressed on wet electrolytics. Diameter is same as standard wets. Available in 3 sizes—WR-8 to replace capacities from 4 to 8 mfds., WR-16, capacities from 12 to 18 mfds. and WR-25 from 20 to 40 mfds. Sprague Prods. Co., North Adams, Mass.—RRT.

**SQUARE D AIRCRAFT THUMB SWITCH**, Class 9390. Contact is made by pressing and holding metal button. Switch body is made of bakelite. Enclosed electrical contacts are fine silver, single pole, double break. Hexagon flange, lockwasher and lockout on threaded throat. Designed for flush mounting. Inductive rating is 15 amps at 24 volts DC. Square D Company, 6060 Rivard St., Detroit, Mich.—RRT.

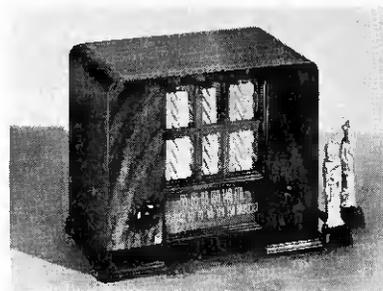


**DURAKOOL BLACKOUT RELAYS**—BF and CF mercury relays available for defense applications. Circuit is made and broken in hermetically sealed chambers under hydrogen pressure. Not affected by dust, dirt, moisture or corrosion. Low contact resistance and explosion proof. When coil is energized plunger is pulled down and displaces the mercury, causing it to rise in the steel chamber until contact is made. BF relay has capacity up to 30 amps and CF relays up to 65 amps. Durakool, Inc., 1010 N. Main St., Elkhart, Ind.—RRT.

**AEROVOX OIL CAPACITORS**, type 20 units, cover voltage ratings from 6,000 to 50,000 D.C. Including dual-section units for voltage-doubling circuits of 12,500-12,500 v. in 0.25-0.25 and 0.5-0.5 mfd. Multi-laminated kraft tissue and aluminum sections are uniformly and accurately wound, and vacuum-treated, oil-impregnated and oil-filled. Capacitors maintain full rated capacity even at freezing temperatures. Hermetically sealed in sturdy welded steel containers. Aerovox Corp., New Bedford, Mass.—RRT.



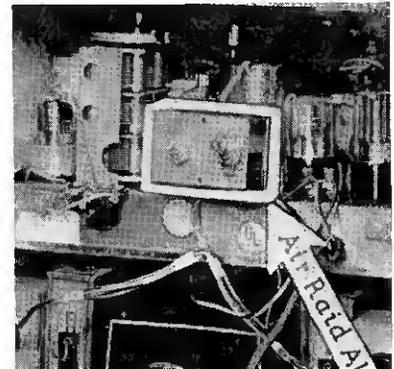
**FEDERAL AIR RAID SIREN**, No. 7, 7½ h.p., available for 220 v., 60 cycle, AC. Single phase. Fuse size 100 amp. Height, 58 in., diameter, 25 in. base. Estimated sound range under average weather conditions and topography, free from obstructions and high noise levels, is 2 miles or better. Possible methods of control are operated by push button only, or with timer. Federal Elec. Co., Inc., 8700 S. State St., Chicago, Ill.—RRT.



**SONORA 5-TUBE AC-DC SUPERHET** tunes 535-1720 kc. (incl. 1712 kc. police channel). Table model, with built-in Sonorascope loop, slide rule dial, dynamic speaker, A.V.C., Plastic knobs. Hand-rubbed walnut cabinets. Sonora Radio & Telev. Corp., 325 N. Hayne Ave., Chicago, Ill.—RRT



**LEE DE FOREST "BLACKOUTER"** is a radio controlled relay device which shuts off lights which may be connected thereto, when a radio station goes off the air in case of a blackout. A buzzer or bell may also be attached to it to sound an alarm. Lee De Forest Labs., 5106 Wilshire Blvd., Los Angeles, Calif.—RRT.



**NATIONAL UNION AIR RAID ALARM**, AR-101 is designed to work on any AVC type of radio set, and is set off by a local "alert" broadcasting station which is on the air 24 hours a day. When the station goes off the air the alarm automatically goes on, creating a loud, penetrating signal in the radio set. Complete in compact metal case, \$5. National Union Radio Corp., 57 State St., Newark, N. J.—RRT.



**WABASH BLACKOUT BULB UNIT** has been changed from the original unit in color of light—a deep orange color. Current consumption has been reduced to 15 w. Improved type of heavy black silicate coating prevents light leakage. Fits any household socket and lists at 45c. Wabash Appl. Corp., 335 Carroll St., Brooklyn, N. Y.—RRT.



(Continued from page 30)

the right thing you would contact our Association or any legitimate store before making such an outlandish statement.

The following quotation, made by the Columbia Broadcasting System, was published in the March issue of RADIO RETAILING-TODAY:

"The success of radio's attempts to serve in this crisis will depend on the skill and loyalty of the men who supply the nation with sets and keep those sets in working order. I am sure that the American radio retailer and repair man will rise to his responsibility."

You will find that our Radio Technicians' Association men are above the average technically and have a sincere desire to serve the public at the lowest possible cost. We have always endeavored to cooperate with the customer.

A copy of your newspaper is being forwarded to the Radio Board, Washington, along with this letter to see if pressure can be made nationally to prevent future articles of this nature from appearing in any publication. Such articles will only undermine the good feeling that has been built up between dealer and customer. It not only leaves a sense of doubt but violates instructions given us by various Boards.

We hope this presents a new light at this time, when the radio serviceman is working under such a handicap.

I am sorry the article was published and hope you see fit to correct or retract the statements made.

In behalf of the Radio Technicians' Association I thank you for this cooperation.

Very respectfully yours,

Harry E. Ward, Jr.,  
Public Relations

Hygrade Sylvania experts, Walter E. Jones, Director of Commercial Engineering Dept., and Ralph S. Merkle, Technical Editor of *Sylvania News*, counter with these statements.

Considerable interest has been evidenced in the advice to consumers issued recently by a Washington Bureau on care and repair of radio sets. While the majority of the points which caution the user on care in cleaning, tuning and proper placing of the set are excellent instructions, it is felt here that advice to have sets repaired in the home is satisfactory only for minor troubles which can be corrected by tube replacement, possibly cord and plug repair and similar easily changed items. However, where major repairs are concerned, serious complications enter to make home servicing unfeasible and in some cases impossible.

An outline of radio repair procedure to be followed is: 1. Diagnosis of difficulty; 2. Repairing or replacing the defective part or parts; and 3. Testing the receiver to make certain that it is in a satisfactory condition.

Adequate diagnosis takes time and involves the use of cathode-ray oscil-

(Continued on page 35)

# THEY DON'T GET RID OF THEM NOW They Bring Them To You To Fix!



—And some of them are "honeys"—five, eight, even ten years old! But it's your patriotic duty to keep those old babies working when there are no new sets being made.

There's only one way to handle this extra volume, and that's by repairing more sets, per hour, per man, by means of increased efficiency. And the thirteen volumes of Rider Manuals will give you just that.

### RIDER MANUALS

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

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Inside the Vacuum Tube—complete elementary explanation of fundamentals of vacuum tubes, A-C Calculation Charts—146 charts covering A-C calculations from 10 cycles to 1000 mc.

### OTHER RIDER BOOKS YOU NEED

The Cathode Ray Tube at Work .....\$3.00  
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HOURLY-A-DAY-WITH-RIDER SERIES—on "Alternating Currents in Radio Receivers"—on "Resonance & Alignment"—on "Automatic Volume Control"—on "D-C Voltage Distribution."

90c each

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

# STANCOR TRANSFORMERS

**First Choice of Servicemen!**



**STANDARD TRANSFORMER**

• CORPORATION •

1500 NORTH HALSTED STREET... CHICAGO

# Sound Guards War Plants

**"Acoustic Fence" Keeps Vigil Around Important War Industries Through All Kinds of Weather**

• Man has always been forced to bend his brains as much in protecting his possessions as he did in acquiring them.

In wartime the problem of protection takes on far grimmer aspects. Mere thievery is child's play to combat in comparison to the daring modern saboteur intent on much higher stakes.

Several types of protective devices for fences were available to war industry when the likelihood of sabotage grew to menacing proportions—photoelectric, make-and-break circuits, sonic pick-ups, burglar alarm and death-dealing systems—but all had loopholes. Consequently, there was a desperate need for a dependable way of improving the efficiency of a plant's first line of defense—which is the fence.

## A Fence With Ears

The engineers of E. I. du Pont de Nemours & Company were accordingly asked to "invent a saboteur-proof fence." After developing the idea for the protective fence, the Du Pont engineers contacted the Astatic Corp. of Youngstown, Ohio who in turn formed the Automatic Alarms

Co. to build the equipment.

Now, a "fence with ears" has passed its test under actual conditions of use. The acoustic fence, so-called, filled protection requirements so completely, it is being said that it cannot be defeated. Even the inventor's efforts are thwarted in trying to climb or jump over, dig under, saw or cut through a fence that has been lent these super-sensitive detector ears.

## Picks Up Vibrations

In fact, the sound of approaching footsteps, even the wind's sigh or a bird's chirruping is heard. The acoustic fence passes on greatly amplified sounds to guards who are on the alert at a central control panel for the alarm signal and the flash of the red light which tells just where along miles of fence an intruder is attempting illegal entry.

The device takes advantage of the fact that most plant fences are all-metal or of substantial wood construction. If a continuous wire fence (or substantial wood fence) is disturbed by even an exceedingly small impact, mechanical vibrations will pass from the point of the disturbance and travel along the fence for an indefinite

distance. Impact upon the ground will start vibrations in the ground which pass to the fence, and thence along the fence for considerable distances. It is, therefore, possible to place a vibration pick-up against a member of the fence and with suitable amplifying equipment get audible registration of vibrations set up in the fence at remote points.

In actual practice, an especially developed pick-up, similar to phonograph types, of weather-proof construction is attached to the fence at intervals of 1,000 feet. This results in an operating range of 500 feet on each side of each pick-up, which is about one-third the maximum possible range.

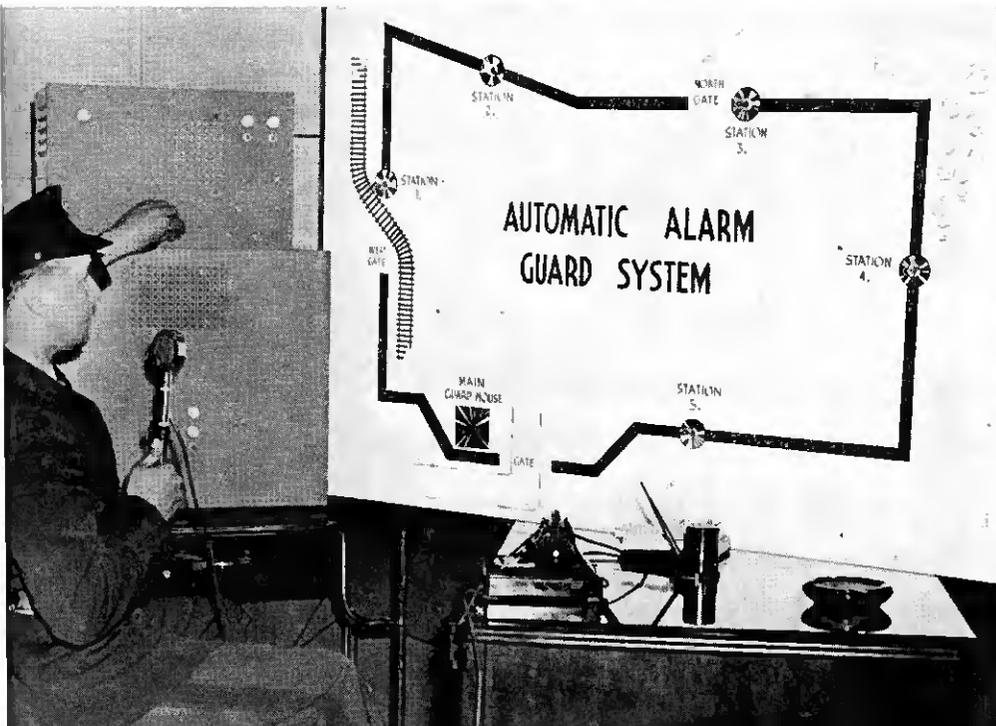
## Blinker Lights

Where guard towers are placed along the fence at intervals of 800 feet to 3,000 feet, it is only necessary to have pick-ups between guard towers. A loud speaker enables the guard to hear and usually identify the nature of the disturbance to the fence. Also a relay closes and rings a bell in the guard tower and if desired transmits a signal to a central headquarters over the telephone system; in addition, a pilot light indicates that the system has been disturbed and must be reset by hand.

The system enables the guard to hear any disturbance along the fence, also gives a visual indication that a disturbance has occurred and the alarm bell is provided to wake the guard up if he is asleep or drowsy. It also serves as an alarm in the event that the guard is away from the post when the disturbance occurs.

The fence is extremely sensitive, protected from tampering by guards themselves, cannot be put out of action by external tampering and offers the necessary flexibility to meet the requirements of particular installations. The equipment is simple in operation, involves no exceedingly fine adjustments, is independent of terrain, is easily maintained, and is economical to install.

**Guard in central control room listens for any unusual noise picked up along the acoustic fence. Any attempt to pass the fence is heard through amplifier and blinker light on board flashes nearest the attempt. Squad cars are dispatched.**





(Continued from page 33)

lographs, tube tester, volt-meters and much other equipment. It is hardly to be expected that any housewife would countenance an operation on her living room rug which required five or six large pieces of equipment in addition to a tool kit and spare parts.

A soldering iron must then be hooked up to make the replacement of parts. On completion of the repair work, a signal generator, an output meter, and similar equipment may be needed for final checking. To avoid ear-splitting noises that would drive a housewife into frenzy, the loud speaker must be disconnected while aligning the receiver. It is obvious that such procedure takes unnecessary extra time.

Inefficiency and wasted efforts that are a part of servicing sets in the home, include extra trips, to the customer's home and the parts jobber's store, wear and tear on delicate and important testing equipment. All of this, at a time when greatest conservation of physical and material assets, energy, tires, and electrical equipment is of paramount importance, shows that advice to service all sets in the home does not follow the facts in every case.

### Phono and Changer Service Notes

Where the rumble is objectionable, see that the changer or player floats freely in its mountings and does not make solid contact with the cabinet or chassis. See that connecting wires between the chassis and changer or player are not tight, but have plenty of "play." Warped turntables, bent center pins, and records with worn center holes will all cause "wow." The cause can usually be spotted by watching the pickup while the record is playing. If the pickup oscillates slightly back and forth due to some off-center condition, the "wow" will be timed with the oscillations when they are causing the trouble.

### Hum, and "Wow" Pickup

AC hum may be due to excessively long leads from the pickup to the amplifier as in the case of separate players. Shorter lines, or high to low impedance transformers at each end, or a pickup with more output voltage will solve this. With the volume control at the player end, the impedance of the line is pretty well established by the setting of the control. With a high output pickup, the control can be set at a correspondingly lower value hence the impedance of the line is less and less hum will result. Examples of this can be observed when playing a "loud" record and a "soft" record at the same room volume. The "soft" record will appear to have more hum on it because the volume control setting is higher and for the reasons just mentioned.



**Same diameter as wets**  
**Specially made to stand high voltage peaks**  
**Handles AC ripples that standard 450 V. Drys cannot**

**NOT A SUBSTITUTE!**  
**...It's a Super-Rugged Sprague "Dry" Specially Built to Do a Wet Electrolytic Job**

**W**ARTIME restrictions make it difficult to supply wet electrolytic condensers because of their aluminum thread-neck cans—but, thanks to Sprague engineers, you can keep right on making wet electrolytic replacements, and do it with the same assurance as though you were using the finest wet electrolytic condensers ever built.

The answer is the new Sprague Type WR Replacement Capacitor—a tubular cardboard dry electrolytic of very high voltage formation. Not only will WR's stand the peak voltages often impressed on wet electrolytics, but they'll handle

the AC ripples that might cause standard 450-volt dry electrolytics to overheat to the point where they break down. The diameter of WR's is the same as that of standard wets so that they will fit the screw-type can mounting holes. Their metal feet can then be soldered to the chassis for firm mounting.

Sprague Type WR's are now available in three sizes—WR-8 which replaces wets from 4 to 8 mfd.; WR-16 to replace capacities from 12 to 18 mfd., and WR-25 to replace capacities from 20 to 40 mfd. Ask your Sprague jobber today!



**WARNING!** Don't be fooled! Although standard dry electrolytic condensers can sometimes be used as wet replacements, your safety margin is apt to be mighty thin. High surge voltages and AC ripples may cause trouble. That's why it pays to play safe by using the new Sprague WR Types. They're not substitutes. They're actually built to do a wet electrolytic job. They're the real thing as far as performance and durability are concerned.

**SPRAGUE WET REPLACEMENTS**  
 (SPECIAL WR TUBULAR DRIES)  
 SPRAGUE PRODUCTS COMPANY, North Adams, Mass.

**Expediter . . . . BOGEN!**

**BOGEN SOUND SYSTEMS** are expediting production in key defense plants throughout the country.

**INTERCOMMUNICATION** between vital points is achieved instantly. Important messages to the workers are made while work continues. Alarms are sent automatically—in an instant—to every corner of the plant.

**BOGEN SOUND SYSTEMS** step up production—multiply efficiency—expedite the flow of work—Write for details!

**DAVID BOGEN CO., Inc.**  
 663 Broadway, New York City

**db** THE STANDARD OF PERFORMANCE  
 Bogen Sound Systems

# Success in Servicing

**Business plans that have proved "winners"  
for this New York radio serviceman.**

Ray Mattraw has been in the service business, for upwards of sixteen years, ten of which were spent in field service work for a large manufacturer. For the past six-year stretch, he has been engaged in building up a successful service shop at Watertown, N. Y. The suggestions and hints passed on in this article are based on actual trial and error methods which Mattraw himself has tried. His shop probably holds the record for most service customers in the Watertown area.

## **Calls Monthly**

To begin with, Mattraw maintains "you must integrate yourself with your community." He has made personal calls, for example, on all hotel managers, restaurant operatives, business executives, and merchants of all sorts, from the independent shoe retailer to the furniture credit-shop. With hotel managers, he leaves sets of cards, so that when portables or car radios fail to work, he gets the calls. The same holds true for restaurants. With merchants he discusses idea of having a radio receiver in the store, to hear latest news flashes, and allow customers to do likewise. Even with set production stopped entirely, supply of receivers on hand in average dealer's shop is adequate to stock such merchants with second-hand sets. Receivers which servicemen long ago took in, on one trade or another, can be liquidated to merchants, in many instances. Business executives are also prospects for inter-communication systems for their offices and for departments. They also have their own home and car radios which need servicing.

Mattraw leaves cards or blotters

with name, imprint and telephone number at every business contact. And he calls on EVERY business contact, at least once monthly. He leaves his cards at all factories, with plant superintendents. Workers are too tired when they come home at night after a long shift, to think of having their radios serviced, so Mattraw has cards inserted with paychecks or handed out at some other time of day. He doesn't neglect seeing the schools, for nowadays, with the war situation acute, history, economics and foreign language classes in junior high and high schools, utilize radio in their instruction periods. This gives him acquaintance with music instructor and with the principal, who may be interested in loudspeaker outlets for classrooms. Many schools now have their own miniature broadcasting studio, with actual studio equipment, which can be operated in cooperation with a local broadcast studio. This school equipment needs constant checking over. Mattraw keeps in with local broadcasters and theatre owners, checking their needs from time to time, when station engineers are tied up or motion-picture apparatus goes haywire and no time is available to contact out-of-town sound experts.

## **Advertising Pays**

So much for personal contacts. In addition, Mattraw keeps constant insertions of advertising in local free-distribution newspaper or "shoppers guide." Many communities have such sheets and Mattraw favors it over insertions in regular newspapers. He finds, he says, that people "do read circular shopping issues, continually and do notice such advertising." Mat-

traw also is a firm believer in display ads in both phone and city directories. Strangers who need sets serviced, and other forms of transient trade almost invariably look up "Servicemen" in phone or city listings.

## **Charges Scheduled**

Mattraw has some interesting suggestions on price. He charges flat rate of one fifty to go to any home and make ordinary routine inspection. Under no circumstance will he undertake a radio-set repair job, unless trivial, on the family floor. Tube checking at the shop is no longer free, Mattraw charges fifty cents to test tubes, even when customer lugs them in personally. Reason is that under this setup, if tubes are all O.K., Mattraw doesn't have to perjure himself and find one bad, to make operating expenses. Mattraw boasts of being "the highest-priced serviceman in the community," yet has less than 5% kickbacks on price. With war news important, everyone wants sets periodically checked.

Mattraw also advocates that when set is repaired in shop, Western Union messenger return set from shop to customer, to save wear and tear on shop truck. The Western Union messenger boy will pick up payment, and won't leave radio without it, if such are his instructions.

Mattraw advises every serviceman who may be drafted to arrange to have his shop continued under its original name, even if some other individual conducts the business. People are fickle and much goodwill and business worth can be dropped during wartime, if shop goes under new name or is cancelled out entirely. Mattraw also warns that after war, influx of servicemen, trained by Uncle Sam in Signal Corps, is to be expected, "making servicemen a dime a dozen," — at least that's his belief.

As a final suggestion, Mattraw says: "Be a joiner." Join all clubs and organizations possible and put in a personal appearance now and then. Make a speech at Rotary on Radio's Part in War, write a gratis radio column for local newspaper. Publicity is meat and drink for radio servicemen and don't forget it for a moment. Cooperate with Red Cross, Salvation Army, USO, by giving window and poster space in your shop. In short, cultivate the social and community spirit end, and you'll find business.

The Watertown, N. Y., service shop operated by Ray Mattraw





To industries converting to war production where the use of magnet wire and coils is important...

*Anaconda Can Help!...*



Three Anaconda mills have unfilled capacity on magnet wire and coils... for war work

WRITE US IMMEDIATELY FOR COMPLETE INFORMATION



ANACONDA WIRE & CABLE COMPANY. GENERAL OFFICES: 25 Broadway, New York. CHICAGO OFFICE: 20 N. Wacker Drive. Subsidiary of Anaconda Copper Mining Company. Sales Offices in Principal Cities. 42263A

*Magnet wire and coils*

**ANACONDA WIRE & CABLE COMPANY**

**Every Radio Service Man Needs This VACO Amberyl Electrolytic Condenser Nut Wrench**



**It's Great**

For easy removal or tightening of electrolytic wet or dry condenser Pal Nuts without damage. Two sizes, deep drawn steel sockets. No interference with leads. Sockets 1 1/2" deep, copper finish. Break proof and shock proof handles.

Write for information regarding our big line of VACO screw drivers.

**VACO Products Co. 1603 S. Michigan Ave. CHICAGO, ILL.**

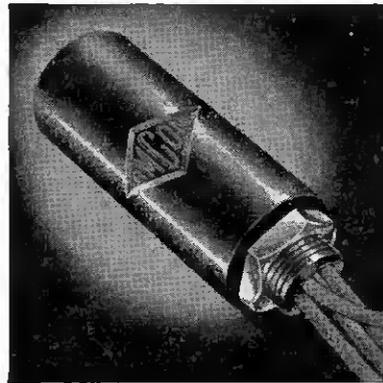
**HOW MUCH SHOULD A TESTER COST?**

First, let's ask what *You* require. The various RCP Test Instruments are designed to supply *maximum* sensitivity, flexibility and utility in specific features and ranges. Why buy a Lincoln limousine if a Ford roadster suits your purpose? Compare RCP Test Instruments point-by-point, with competitive testers, analyzers and signal generators and you'll convince yourself that RCP offers the finest values.

Send for Catalog No. 125. Glance at RCP's Universal DeLuxe Multi-tester, Model 414. It embodies advanced design features far outclassing other multi-range, multi-purpose meters. Direct reading, accurate, rugged. Only \$28.95. Forty-seven other fine instruments at rock-bottom prices. Available to radio men who are servicing priority plants and public institutions. See your distributor for details.



**RADIO CITY PRODUCTS CO., INC.**  
88 PARK PL. NEW YORK, N.Y.



*Americans' Contribution to Victory!*

**ELECTROLYTIC AND PAPER BY-PASS CAPACITORS IN PLASTICS**

- For Chassis Top Mounting
- Improved Characteristics
- Finer Performance
- Shockproof Plastic Housing

They're new! Shimmering Plastic replacing aluminum in American's famous line of Electrolytic and Paper By-Pass Capacitors. New features! New improved electrical characteristics! New operating efficiency—and new beauty on any chassis top installation. Now available in all standard capacities and working voltages. Also available to individual specifications for defense work. Write, wire or 'phone.

LITERATURE FREE

**AMERICAN CONDENSER CORP.**  
2508 S. Michigan Ave. Chicago, Ill.

**RAID-O-LARM**

*Safeguards offguard hours*

... radio-remote controlled raid warning for homes, air raid wardens, institutions, industrial plants.

A simple adapter, attaching to any set, RAID-O-LARM is the answer to an emergency need.

*Born of necessity, but capably engineered, honestly made and properly sold.*

Fair profits, fast turnover, for dealer and distributor... a calling card for new set sales and the sale of repair service and parts.

**V Model at \$5<sup>00</sup> List**

**BLACKOUT CONTROL, INC.**  
545 FIFTH AVENUE NEW YORK

... BLACKOUTERS, Remote Control for Lights, previously announced, manufactured to order only. For information, write above.

**AUTO RADIO SERVICE**

(Continued from page 27)

of the ordinary auto antenna and its shielded lead-in a special type of coupling circuit must be used if the signal strength is not seriously reduced by this shunt capacity. In the circuit shown the shunt capacity of the antenna is utilized as part of the capacity of the tuned grid circuit by isolating the lower end of the grid coil from ground by a high value resistance. The antenna signal current is introduced into the tuned circuit through the 0.006 mfd. capacitor. The adjustable trimmer is used to balance up the tracking of the RF end of the set at the low frequency end of the dial for the antenna being used, just as the oscillator trimmer is adjusted for tracking. The antenna voltage is thus introduced in series with the tuned circuit.

Fig. 4 is the phase inverter used to drive the push pull audio stage of Motorola model 37D-1. The load resistance is divided into two equal halves with the center grounded for audio frequencies. One of the 6V6GT grids is driven from the plate of the 6J5GT, while the other 6V6GT is driven from the cathode of the 6J5GT. Cathode bias is used on the 6V6GT tubes and zero bias on the 6J5GT.

Interference elimination in automobile set installation generally involves the noises developed by two separate sources. The first source is the car electric system, and the second is the mechanical parts of the car which develop static charges when in motion.

The electric system noises originate in general from the ignition system, and the generator. The sparking of the distributor rotor and the accompanying current leakage from the high tension wiring and plugs produces a broad band type of signal which interferes with most of the radio spectrum. Plug and distributor suppressors help to isolate this high voltage steep wave front noise. Spark-plug suppressors are not usually employed unless absolutely necessary since they rob the engine of some of its "pep."

**Noise Sources**

As mentioned before, the electrical system interference can enter the set only through the exposed leads, that is, the antenna and battery lead and any other external wires. While the interference can be filtered out of the battery lead to the set, the same technique cannot be applied to the antenna circuit since this would also reduce the desired signal. It is therefore necessary to reduce to a minimum the radiation of the noise energy from the high tension parts of the ignition

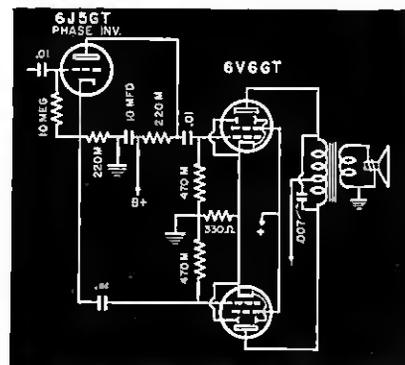


Fig. 4—Phase inverter circuit used in Motorola 37D-1 auto set. Plate load divided into equal parts and output grids are fed from plate and cathode.

system and from those parts of the car which are poorly grounded and therefore act as re-radiators of the noise.

**Preventing Re-radiation**

The prevention of radiation from various parts of the car involves the grounding of the offending part or parts to the chassis. Many parts of cars are quite well insulated from the chassis through rubber shock absorber mountings. Entire engines in the "floating power" cars of a few years ago are rubber mounted. These parts must be connected to "ground" with heavy copper braided straps. If the bonding lead is too small, its inductance will be high enough to defeat its purpose. Ordinary copper wire and narrow braid less than 3/8" are generally too small to do a job.

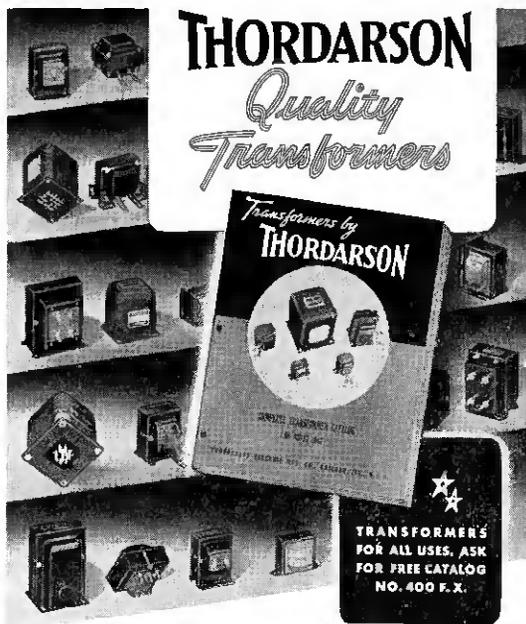
In many cases, the problem of licking interference is one of hunting for the offending part. In all cases the instructions from the manufacturer of the radio and the car should be followed completely where they are available.

Static noise voltages are generated mainly by the tires moving over certain types of pavement. It is worse in dry weather, since the insulation resistance of the rubber tires to earth is highest. Front wheels give the most trouble since the grease film in the bearings is an efficient insulator. Spring type connectors are available for grounding these front wheels to the axle shaft. Various conducting powders are available for internal application to tires.

Other electrical system noises include the whine from the generator commutator, fan motors, clicks from gauges, etc. These can usually be reduced or eliminated with a by-pass capacitor to ground at the offending unit.

**Tuning Eye Failure on Zenith Sets**

All sets employing tuning eye on dial scale. If eye remains stationary, replace 6C5G tube on rear chassis. Failure of this tube also responsible for fading and poor reception.



Other catalogs available are No. 500, illustrating and describing many types of transformers for broadcast, aircraft, military and

other communications uses; Catalog No. 600 covers the complete line of Thordarson amplifiers. The Industrial Department will be glad to discuss with you special types of any characteristics, size or quantity.

**THORDARSON**  
ELECTRIC MFG. CO.

500 WEST HURON STREET, CHICAGO, ILLINOIS

TRANSFORMER SPECIALISTS SINCE 1895



# Wait! WE'RE HAVING OUR OWN TRADE SHOW

*In the June issue of*



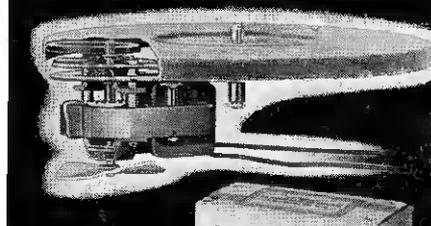
To show the rapid conversion of Distribution from merchandising to servicing ... To feature products available for the critical summer months ... To stress maintenance as a wartime necessity ... To make vital contacts between manufacturers and the trade, now urgently needed as jobbers and manufacturers trim their sales staffs.

**CLOSING DATE OF TRADE SHOW ISSUE  
JUNE 8**

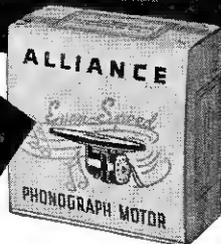
**CALDWELL-CLEMENTS, Inc., • 480 Lexington Avenue, New York**

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**ALLIANCE**  
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PHONO-MOTORS



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**EASY TO INSTALL...**  
**Fit 95% of all makes**

● The low cost and quick, easy installation of "Even-Speed" Motors make it more practical and profitable to replace the entire unit when trouble occurs than to attempt what may prove to be a difficult repair job. The "Even-Speed" line of only four phono-motors provides a unit for 95% of all replacement requirements. Carry a few in stock for every month will bring a greater demand for replacements.

Each motor and turntable comes in an attractive carton for your greater convenience.

Write today for complete information and low prices on the "Even-Speed" line of phono-motors.

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**ALLIANCE MFG. CO.**  
**ALLIANCE, OHIO**

**What Happens When "Betty Goes to War"**



Harry J. Deines, who has developed effective morale campaigns for General Electric Radio-electronics division, now concentrating on war production, is here shown with starlet of his latest production, "Betty Goes to War." Picture sequence tells story of young married couple in GE plant, and how, when Herb is called to Army service, Betty serves her country by building military radios.

**Book Reviews**

**1942 Radio Diagrams and Servicing Information**

by M. N. Beitman  
Supreme Publications  
328 S. Jefferson St.  
Chicago, Ill.

The "most often needed" radio diagrams for 1942 radios as compiled by M. N. Beitman has just been published. Like previous editions for sets of other years, this book contains the circuit diagrams and service data on the more popular models. This edition, the fifth, contains 192 pages of diagrams and data, including a complete receiving tube characteristic table.

Many models which were released just before the production shut-down are included. The price is \$2.

**The Mathematics of Wireless**

by Ralph Stranger  
Chemical Publishing Co., Inc.  
234 King St.  
Brooklyn, N. Y.

This is the first American edition of this English book which is aimed at the "wireless experimenter" or the serviceman, and amateur who wishes to improve his mathematical background.

The book is not a complete text on the subject of mathematics but more in the form of an outline of the various branches of that science. The branches, arithmetic, algebra, geometry, trigonometry, differential calculus, integral calculus, and loga-

rithms are explained in a simplified form. The operation and use of the slide rule is illustrated with enlarged pull-out photos. The application of these subjects to radio is illustrated in special chapters and problems. The price of this book is \$3.

**Acoustic Design Charts**

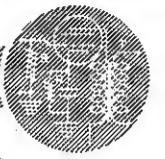
by Frank Massa  
The Blakiston Co.,  
Philadelphia, Pa.

This unusual book will prove of value to engineers and designers requiring authoritative data for acoustic and related problems. This book is a compilation of acoustic engineering data into graphical form. Each pair of pages consists of a graph representing the relationship of the variables while the opposite page of the pair explains the graph and shows by example how it is used.

**Ten Sections**

The book is divided into ten sections, dealing with fundamentals, attenuation in various media, mechanical vibrating systems, acoustical elements, radiations from pistons, directional characteristics, reverberation and reproduction, exponential horn speakers, electro-magnetic design data, and a section of miscellaneous data. Most of the charts involving dimensions have both English and Metric curves. The scales cover a range of values which are common in actual designs.

The author is in charge of the Acoustic Division, Brush Development Co. The book contains 228 pages and is priced at \$4.



### Radio Leaders in Chicago Meetings

The week of June 7th in Chicago will mark several radio gatherings, although the regular Parts Show has been cancelled.

The 18th annual and "all out" war convention of the RMA is set for June 9th, complete with a membership luncheon session and various division and committee meetings later. Featured speaker is William L. Batt, a key official of the War Production Board, director of the WPB Materials Division and a chief aide to Donald M. Nelson.

RMA president Paul V. Galvin will preside at the luncheon meeting and there will be a report by treasurer Leslie F. Muter. The annual convention golf tournament will be held June 10th at the Calumet Country Club.

The annual meeting of the National Radio Parts Distributors Association will be held June 8th. Jobbers throughout the U. S. were asked whether they wanted the meeting; the majority said yes. NRPDA directors will meet June 7th, and the full membership huddle will be the following day.

Program plans will depend upon what happens before June 8th, in the fast-moving war production picture, but tentative plans are to invite representatives from both the WPB and OPA. Jobbers who wish to suggest topics of national importance for the meeting, are invited to send them to NRPDA temporary headquarters at P. O. Box 2, Reading, Pa.

Invited to the meeting on June 8th are "The Reps," the Sales Managers, and any other interested radio men.

The Sales Managers Club, Western Group, has named a Victory Program committee, including J. J. Kahn of Standard Transformer (chairman), W. A. Kuehl of Drake Electric, Ed Singer of Alliance Mfg. Co., and Jerome Prince of Carron Mfg. Co., to plan a joint meet with NRPDA and The Reps. The meeting is set for June 8, Stevens Hotel; dinner at 6:30 p.m. Manufacturers, jobbers and reps are invited and all are urged to send reservations to Mr. Kahn at 1500 N. Halsted St., Chicago, with checks at rate of \$2.50 per plate. Officials from WPB and OPA will be invited to speak, and answer questions on radio parts industry topics, according to Kenneth C. Prince.

"The Representatives" of Radio Parts Manufacturers will get together June 8th at the Bismark Hotel, for the annual meeting and banquet, under the auspices of the Chicagoland Chapter of the organization. On the program are S. K. MacDonald, the Reps' president; representatives from Sales Managers Clubs and from the National Radio Parts Distributors Association; and a representative from the War Production board. The chairman of arrangements is Royal A. Stemm, 21 E. Van Buren St., Chicago. This meeting is for both members and non-members.

## Replacing DISCONTINUED WETS . . .

- Type GL, the always popular metal-can dry electrolytic. High filtering efficiency. Necessary choice of capacities, voltages, combinations.
- Type F prong-base dry electrolytic in compact metal can, packing a lot of dependable capacity into minimized bulk. Already a popular replacement in sets initially equipped with this type, it is now being used in general servicing.
- Type PRU, the handy AC-DC universal replacement dry electrolytic in tubular cardboard casing, with spade lugs. Also the PRS Dandees and the PBS cardboard-case types.

Ask Our Jobber . . . He'll gladly show you how Aerovox can help you keep those radio sets going by means of satisfactory replacement condensers. Ask for new 1942 catalog—or write us direct.

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*I Forgot to Bring Home a . . .*

### Fidelitytone PHONOGRAPH NEEDLE

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

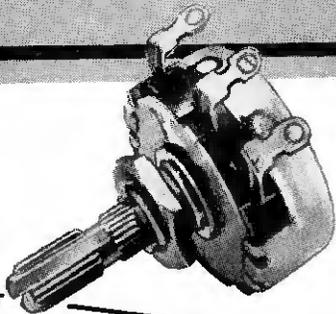
Floating Point permits smooth groove action and Filters Record Scratch

Sheath construction acts as needle guard

PERMO Point-AID NATIONAL DEFENSE IN Ship Compasses

As Advertised in . . .  
the Ladies Home Journal and 10 other magazines

Just try a  
**CLAROSTAT**  
**CONTROL!**



Now featuring . . .

- ★ Perfected bakelite support with thoroughly-bonded long-life carbon element. Glass-like resistive surface virtually immune to humidity, wear and tear.
- ★ Split-finger contact rides smoothly over glass-like surface of resistive element, with positive contact at all settings.
- ★ Accurately-fitted shaft and brass bushing for smooth rotation and without danger of binding.
- ★ Right-angle terminal lugs for easy soldering. Solder kept out of control itself.

★ Such features are interesting if you want to know what makes a good radio component really GOOD. But the main thing is the actual test. Pick up a Clarostat volume control. See how smoothly it rotates. Check resistance value. Put it in service and see how closely it maintains its original resistance value over months and years of steady use. Judge it for yourself. That's all we ask.

Try a **CLAROSTAT** . . .

- ★ Order some Clarostat volume controls from your Clarostat jobber. He'll gladly help you pick the best types for given replacement needs. Just try Clarostat!



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

# Blackout & Emergency Equipment

Complete Directory of Manufacturers  
Compiled by Radio Retailing Today

- Air raid alarms, sirens . . . . . **A**
- Air raid alarms, radio . . . . . **AR**
- Amplifiers . . . . . **AM**
- Blackout light bulbs . . . . . **B**
- Blackout switches, photo tube . . . . . **BP**
- Blackout switches, radio . . . . . **BR**
- Intercommunicators . . . . . **I**
- Luminous paint . . . . . **LP**
- Photo electric apparatus . . . . . **EE**
- Photo-tubes . . . . . **P**
- Relays . . . . . **R**
- Speakers . . . . . **S**

- ADVANCE ELECTRIC CO., 1240 W. 2nd St., Los Angeles, Calif.—R
- AMPLIFIER CO. OF AMERICA, 17 W. 20th St., New York, N. Y.—AM
- ATLAS SOUND CORP., 1451 39th St., Brooklyn, N. Y.—S
- AUTOMATIC ELECTRIC MFG. CO., Mankato, Minn.—R, Timers.
- BELL SOUND SYSTEMS, INC., 1183 Essex Ave., Columbus, Ohio—I, AM
- BENJAMIN ELECTRIC MFG. CO., Des Plaines, Ill.—A
- BLACKOUT CONTROL, INC., 545 5th Ave., New York, N. Y.—BR, AR
- DAVID BOGEN CO., INC., 663 Broadway, New York, N. Y.—I, AM
- BREWER ELECTRIC MFG. CO., 5112 N. Ravenswood Ave., Chicago, Ill.—A
- CINAUDAGRAPH SPEAKERS, INC., 3911 S. Michigan Blvd., Chicago, Ill.—S
- CONTINENTAL ELECTRIC CO., Geneva, Ill., "Cetron" P
- CONTINENTAL LITHOGRAPH CORP., 953 E. 72nd St., Cleveland, Ohio—LP
- CRESCENT INDUSTRIES, INC., 4140 Belmont Ave., Chicago, Ill.—S
- LEE DEFOSSET LABORATORIES, 5106 Wilshire Blvd., Los Angeles, Calif.—BR
- DURAKOOL, INC., 1010 N. Main St., Elkhart, Ind.—R (Explosion proof)
- HUGH H. EBY, INC., 4700 Stenton Ave., Philadelphia, Pa.—R, P, EE
- ELECTRONIC PRODS. CO., INC., St. Charles, Ill.—R, P, EE
- ERWOOD SOUND EQUIP. CO., 223 W. Erie St., Chicago, Ill.—AM, S
- FEDERAL ELECTRIC CO., INC., 8700 S. State St., Chicago, Ill.—A
- FLUORESCENT PIGMENTS CO., 445 W. 41st St., New York, N. Y.—LP
- GENERAL ELECTRIC CO., Schenectady, N. Y.—BP, R, P
- GENERAL LUMINESCENT CORP., 730-34 Federal St., Chicago, Ill.—LP
- GENERAL OUTDOOR ADVERTISING CO., 122 E. 42nd St., New York, N. Y.—BR
- G-M LABORATORIES, INC., 4310 N. Knox Ave., Chicago, Ill.—R
- GUARDIAN ELECTRIC MFG. CO., 1621 W. Walnut St., Chicago, Ill.—R
- INDUSTRIAL TIMER CO., 117 Edison Ave., Newark, N. J.—BR
- JENSEN RADIO MFG. CO., 6601 S. Laramie Ave., Chicago, Ill.—S
- MAGNAVOX CO., 2131 Bueter Rd., Ft. Wayne, Ind.—S
- JOHN MECK INDUSTRIES, 1313 W. Randolph St., Chicago, Ill.—AR, AM

- MEISSNER MFG. CO., Belmont and 7th Sts., Mt. Carmel, Ill.—R
- MICRO SWITCH CORP., Spring St., Freeport, Ill.—R
- NATIONAL UNION RADIO CORP., 57 State St., Newark, N. J.—AR
- OPERADIO MFG. CO., 13th & Indiana Sts., St. Charles, Ill.—I, AM, S
- OXFORD TARTAK RADIO CORP., 915 W. Van Buren St., Chicago, Ill.—S
- PERMOFLUX CORP., 4910 W. Grand Ave., Chicago, Ill.—S
- PHILCO RADIO & TELEV. CORP., Tioga & C Sts., Philadelphia, Pa.—AM
- PHOTO BELL CORP., 123 Liberty St., New York, N. Y.—EE
- POTTER & BRUMFIELD MFG. CO., Princeton, Ind.—R
- PRESTO RECORDING CORP., 242 W. 55th St., New York, N. Y.—AM
- QUAM-NICHOLS CO., 33rd Place & Cottage Grove Ave., Chicago, Ill.—S
- RACON ELEC. CO., INC., 52 E. 19th St., New York, N. Y.—S
- RADIO SPEAKERS, 221 Cullerton St., Chicago, Ill.—S
- RADDEK CO., 601 W. Randolph St., Chicago, Ill.—I, AM
- THE RAULAND CORP., 4245 Knox Ave., Chicago, Ill.—I, AM, S
- RBM MFG. CO., Logansport, Ind.—R
- RCA MFG. CO., Front & Cooper Sts., Camden, N. J.—R, P, EE, I, AM, S
- REGAL AMPLIFIER MFG. CORP., 14 W. 17th St., New York, N. Y.—I, AM
- REHTRON CORP., 2159 Magnolia Ave., Chicago, Ill.—R, EE
- REYNOLDS ELECTRIC CO., 2629 W. Congress St., Chicago, Ill.—Control units for electric sirens.
- SPARKS-WHINGTON CO., 42 North St., Jackson, Mich.—A
- STRUTHERS DUNN, INC., 1315 Cherry St., Philadelphia, Pa.—R
- TALK-A-PHONE MFG. CO., 1219 W. Van Buren St., Chicago, Ill.—I, AM
- TECHNICRAFT CO., 119-23 E. 24th St., New York, N. Y.—LP
- THORDARSON ELECTRIC MFG. CO., 500 W. Huron St., Chicago, Ill.—AM
- TRANSFORMER CORP. OF AMERICA, 69 Wooster St., New York, N. Y.—I, AM
- UNITED CINEPHONE CORP., Torrington, Conn.—R, EE
- UNIVERSITY LABORATORIES, 195 Chrystie St., New York, N. Y.—S
- UTAH RADIO PRODUCTS CO., 820 Orleans St., Chicago, Ill.—S
- VITA-VAR CORP., 50 Albert Ave., Newark, N. J.—LP
- WABASH APPLIANCE CORP., 335 Carroll St., Brooklyn, N. Y.—B
- WARD LEONARD INSTR. CO., 34 South St., Mount Vernon, N. Y.—R
- WEBSTER CHICAGO CORP., 5622 Bloomingdale Ave., Chicago, Ill.—I
- WEBSTER ELECTRIC CO., Racine, Wis.—I, AM
- WELTRONIC CORP., 3084 E. Outer Dr., Detroit, Mich.—EE
- WESTERN SOUND & ELEC. LABS., INC., 311 W. Kilbourn Ave., Milwaukee, Wis.—I, AM
- WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark, N. J. "Photronic"—R, P, EE
- WORNER PRODS., 1019 W. Lake St., Chicago, Ill.—BP, EE

## Stromberg's Victory Production Drive

The war production program at the Stromberg Carlson plants went into high speed last month when the firm staged a huge rally of employees to announce winners of the "work for Victory" slogan contest. Army and Navy officials were on hand to stress the importance of the war work being done at the factory. In the SC production drive, employees had submitted more than 3,340 slogans.

The last civilian radio chassis to be built by Stromberg for the duration came off the production lines April 21,

and the company is now completing deliveries of all manufactured products.

## Mr. Petrie Dead

Robert I. Petrie, vice president and general sales manager of the Crosley Corp.'s manufacturing division, died in Cincinnati on May 8th after a short illness. Mr. Petrie was one of the best known executives in the appliance industry, and was previously president and general sales manager of Barlow & Seelig Mfg. Co., Ripon, Wis. Before that, the popular Crosley official had been sales manager for Nash-Kelvinator Corp.



**Jobber Sales Head**



Sylvan A. Wolin has been appointed jobber sales manager for Solar Mfg. Co., Bayonne, N. J., makers of capacitors. The well known exec was previously Solar's sales promotion manager and asst. to Wickham Harter, general sales manager.

**WPB Shifts Radio Officials**

The radio authorities of the War Production Board have been reorganized and new experts are now in charge of industry problems. The shift follows the shut-down last month of civilian radio production, which left few remaining civilian problems except those concerning replacement parts and tubes.

The WPB Radio Section, heretofore directly under Chief Robert C. Berner, and the Consumers Durable Goods Branch, under Chief Louis C. Upton and Assistant Chief Jesse L. Maury, is transferred to the WPB Communications Branch, whose chief is Leighton H. Peebles. Under Mr. Peebles, the new Radio Section Chief is Frank H. McIntosh, an experienced radio engineer, who has just assumed his office. Mr. Maury has also resigned as chairman of the WPB Radio Industry Advisory Committee.

All present and also future radio problems and jurisdiction, including the present limitation "L" orders, and the questions of replacement tubes and parts, are being taken over by the Communications Branch in the WPB reorganization. Some of the Radio Section personnel under Messrs. Maury and Berner are being transferred to the Communications Branch, while others of the present Radio Section staff will remain with the Consumers Durable Goods Branch, with others transferred to the Communications Production Branch under Ray Ellis.

Immediate action and further orders under the "L" regulations are in a state of transition. The question of future orders and action on appeals

under the "L" orders, officials stated, are being handled during the temporary transition period jointly by the retiring Radio Section Chief, Mr. Berner, and the new Communications Branch Radio Section Chief, Mr. McIntosh. Immediate questions affecting set manufacturers and also future supplies of replacement tubes and parts have been discussed by RMA officials in a preliminary way with the new Radio Section Chief, Mr. McIntosh.

Both the Communications Branch under Mr. Peebles and the former Radio Section of the Consumers Durable Goods Branch are in the organization of the Chief of the Bureau of Industry Branches, under Philip D. Reed, in the Division of Industry Operations, whose director is J. S. Knowlson.

**GE to Set Up Servicing Centers**

The authorization of General Electric dealers (those who offer adequate repair facilities in accordance with minimum standards) as local GE appliance service centers in their communities, is one of the features of a streamlined service program announced by the firm's appliance and merchandise department. The plan includes all appliances but radio, furnaces, and air conditioning. A separate plan is being prepared for radio, television and electronics.

A new speed-up on parts supply is also provided in the plan, as GE announces "The establishment of GE owned regional appliance service centers in various sections of the country, each regional service center serving as a pool of replacement parts and repair facilities for several distributorships."

**Jobbers Must Keep Complete Records**

Parts jobbers are being earnestly advised by NRPDA to keep complete records on their business, as these are emphasized by new priority rulings. Also, it is suggested that jobbers give more details to their suppliers, on priority orders, since "in many cases the addition of the 'end use' and name of the user to the regular priority data will enable the producer to show preference between several A-1-A ratings, especially if one of them covers aircraft radio.

NRPDA is busy with interpretations of forms PD-1X, L-63, and PD-336, in a continual effort to help jobbers get parts. It is expected that many vital aspects of these rulings will be discussed at the annual Chicago meeting of the organization, June 8th.

**R.C.P. Expands**

Radio City Products Co., Inc., makers of RCP test instruments, have moved their plant and offices to new and larger quarters at 127-133 West 26th St., New York City. The shift doubles RCP's floor space.

**PROTECT that 40%**

Now more than ever the jobber and service man must protect the standing which he has built. Condenser replacements account for about 40% of all radio repair jobs. Dependable condensers are therefore essential to the building of the utmost in customer satisfaction and in holding your clientele.

**CONTINUOUS, DEPENDABLE SERVICE**

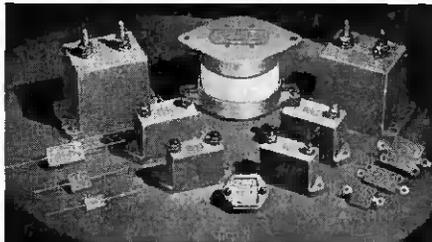
For 21 years the manufacturers of POLYMET ELECTROLYTIC and BY-PASS CONDENSERS have striven to improve quality and service. Add to this a liberal and reasonable mark-up and the fact that no fly-by-night "bargain catalogs" can undersell you on POLYMET. You're protected, your customer is satisfied, your profits and volume increase. We're serving vital defense materials by limiting sizes to those most universally used. Those will serve practically every need, replacing larger electrolytics when proper capacity and voltage are used.

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

**POLYMET CONDENSER CO.**  
699 E. 135TH ST.  
NEW YORK, N.Y.

**SOLAR**

**MICA CAPACITORS**



Solar Mica Capacitors add vital dependability to radio and communications equipment for the Armed Service Branches of the Government.

The "Quality Above All" incorporated in these units is evolved from a wealth of experience.

If Mica Capacitors are part of your present problems, consult Solar for a ready solution.

SPECIAL CATALOG 12-E  
AVAILABLE ON LETTERHEAD REQUEST

**SOLAR MFG. CORP.**  
BAYONNE, N. J.

**THERE'S A DRAKE  
SOLDERING IRON  
FOR EVERY TYPE  
OF RADIO WORK**

From that mighty mite



the Drake No. 400 to the high-speed production "honey"



the Drake No. 600 Special there is a Drake Soldering Iron "just right" for the job.

Drake Heat Controls and the Drake "Magic Cup" Stand are important soldering aids.



SEE  
YOUR RADIO  
PARTS JOBBER

**DRAKE ELECTRIC WORKS, INC.**  
3656 LINCOLN AVE. CHICAGO, ILL.

**NRPDA Chapter Meets  
in Philly**

The latest meeting of the Philadelphia District chapter of the National Radio Parts Distributors Association was held at the Benjamin Franklin Hotel in Philly with some 20 jobbers on hand, including the national NR PDA president, George Barbey.

Discussion centered around priorities and price freezing, disposition of surplus merchandise, plans for national meeting at Chicago, tube resale prices, and cash discounts.

Guests included: Myron E. Wolf, Eshelman Supply Co., Lancaster, Pa.; J. Wellington Kratz and Sam Kratz of Kratz Bros., Norristown, Pa.; Jacob Sberk and R. A. Sylvester, R. A. Sylvester Co., Hazelton, Pa.; Mr. and Mrs. G. O. Zimmerman of Zimmerman Wholesalers, Hagerstown, Md.; R. H. Wile, Eugene Wile Co., Philadelphia; M. P. Roskowitz and M. M. Oberst, M&H Sporting Goods Co., Philadelphia; John Stern and M. Green of Radio Electric, Philadelphia; Aaron Lippman, Aaron Lippman Co., Newark, N. J.; James D. Strauss, J. R. S. Distributors, York, Pa.; Dahl Mack, Scranton Radio Supply, Scranton, Pa.; and R. M. Pepper, Radio Distributing Co., Harrisburg, Pa.

**Radio Reps Hold  
Meetings**

The Regional chapters of "The Representatives" continue to hold regular meetings, in spite of the rush of war-time activities.

News from the Wolverine chapter reveals the addition of Joseph P. Davenport, 642 Beaubien, Detroit, as a new member, and the election of R. A. Adams as the new secretary of the chapter. William S. Lee recently resigned that post.

At the Chicagoland chapter, a new member is Harry Halinton, 4215 N. Newhall, Milwaukee. Another member, Robert Ford Taylor, has received a commission as a Lieutenant in the Army and is now stationed at Aberdeen Proving Grounds, Maryland.

Reps' national records also show that three members have changed their addresses. These are T. C. Ruhling, now at Box 537, Dallas, Tex.; Harrison Reynolds, now at 34 Bay State Road, Belmont, Mass.; and F. E. Harding, 4925 Penn Ave., S., Minneapolis, Minn.

**Boston Jobber Cited for  
A.R.P. Work**

A radio man can contribute a great deal to the success of the air raid wardens in his area, if he'll get into the spirit of community enterprise and all-out helpfulness.

A report comes from Boston concerning the well known jobber, Joe DeMam-

**Good Neighbor**



Down to Rio de Janeiro, Brazil, some months ago went Perry Hadlock, well known radio exec, to become manager of RCA Victor Brasileira. Now he's president of the firm, and has mastered the language well enough to address a recent public meeting in Portuguese.

bro, who's doing some notable work with the wardens of his city. Recently he donated complete sound equipment for use at Civilian Defense lectures, held at a local high school. On this occasion, one of the Boston police captains wrote Mr. DeMambro a letter of special thanks, which also complimented him on being one of the most efficient wardens in the area.

Here's one example of alertness and initiative on the part of a radio expert whose specialized knowledge is important to local welfare.

**Hundreds of Needles!**

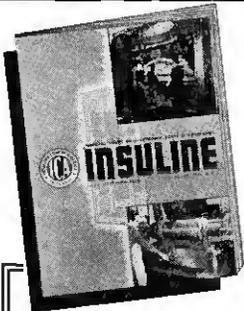


Illustrating the new emphasis on record accessories is this red-white-and-blue window at Lyon & Healy, Chicago, featuring the complete line of 15 different phono needles made by Duxtone, Inc.



# New Catalog

GIVES PICTURE STORY OF  
**INSULINE'S ENLARGED**  
MANUFACTURING FACILITIES



Free to Mfrs.  
and Jobbers.

The  
**JOBBER**  
Too

## Fits into this Picture

- The jobbers who have worked with INSULINE during the past 22 years are not to be forgotten now. . . .
- We believe that there's a need for the Jobber of Electronic Products and Parts as a bridge between the Manufacturer and Purchaser of Defense Materials—More of this business should go through jobbers!
- INSULINE is in a position to cooperate. This is shown in our New 12-page Industrial Catalog—a complete story of our facilities and products.

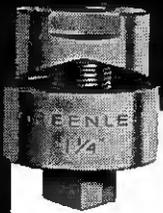


Write for this Catalog NOW!

**INSULINE CORP. OF AMERICA**  
30-30 NORTHERN BLVD.  
LONG ISLAND CITY, N. Y.

# FAST, EASY WAY TO CUT HOLES IN RADIO CHASSIS

NO FILING,  
REAMING, OR  
TEDIOUS  
DRILLING



Here's a handy tool to help the radio worker save many hours of work when cutting holes for sockets, plugs, connectors, and other receptacles in radio chassis. A cap screw is inserted in a small drilled hole, and the punch is easily forced into the die by a few turns of the cap screw with an ordinary wrench. Smooth holes, requiring no filing or reaming, can be cut in metal up to 3/8-inch thick in 1 1/2 minutes or less. Ten punches are available for cutting 3/4, 7/8, 1, 1 1/8, 1-5/32, 1-3/16, 1 1/4, 1 1/2, 1 3/4 and 2 1/4-inch holes. A Greenlee Knockout Cutter is also available for cutting holes up to 3 1/2-inch size for meters. Send for new circular S-114 on Radio Chassis Punches.

SEND FOR  
FREE COPY  
GREENLEE  
CATALOG 33E

**GREENLEE  
TOOL CO.**  
1905 Columbia Ave.  
Rockford, Illinois

## Diversification Improves Radio Volume Outlook

In recent months, the radio man has found himself looking more favorably on the idea of wider diversification of lines.

It means more departments to divide the overhead, more complete service to customers, more traffic and more sources of profit.

Take the example of a store which now sells radio sets, parts, sound equipment, electrical appliances, records and recording accessories, amateur equipment, electronic devices, test instruments, batteries, FM and television. This is the case at Sun Radio Co., 227 Fulton St., New York City and the store has been able to attract a lot more than the usual group of householders.

Sun is now filling orders for government agencies, broadcast stations, industrial organizations, schools and colleges, research labs, amateurs, manufacturers, engineers, mining firms, dealers, servicemen, purchasing commissions and exporters.

### Regular Expansion

The "spread-out" policy has worked well for this outfit. This year the firm celebrates its 20th year in the radio parts business.

A wide variety of lines must be properly supported by appropriate personnel. Samuel Schwartz, sole owner of the Sun firm, believes that radio sales success depends almost entirely upon the calibre of salesmen on the floors. Sun has adopted the policy of "specialists for each department" and sees to it that the activities in any one branch of the business are handled by a selected man well qualified in that particular field. Personal service to customers is considered of utmost importance.

### Wartime Work

Although diversification of lines is a great help during this wartime period of merchandise shortages, it also involves a mass of bookkeeping in order to keep abreast of priority restrictions and rulings on all this merchandise.

To meet this situation, Sun Radio has created a special division of pri-



A store front with some style and glitter is important where street traffic is heavy, as it often is at this downtown Manhattan site. The chief material used is black glass; big letters are wooden, with gilt paint. Note how diversified products are given attractive emphasis.

orities, to learn all about the details and to make an enlightened and organized effort to keep stock and deliveries up. Present stocks are "the greatest ever in its history."

### Special Jobs

Also to be counted in the wartime activities of the company are its big installations of public address systems in industrial plants, schools, factories and offices for the dissemination of music, general instruction and air raid warnings. It is reported by Harry Adelman, advertising manager for the company, that "industrial research and development laboratories faced by the necessity of exerting speed in completing schedules, appreciate what a many-sided radio man can do to help!"

Thus Sun Radio illustrates again the theory that the more lines a dealer carries, the more likely he is to fit into any situation that arises.



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

### Captain John Rider to the Colors

John F. Rider, publisher of Rider's Manual and other radio-service books, has been appointed a captain in the United States Army Signal Corps, and is temporarily located at Fort Monmouth in New Jersey. It is understood that Captain Rider will give special attention to organizing methods for the maintenance and repair of Army radio equipment, in connection with the two-billion-dollar radio production program recently undertaken by the Government.

Captain Rider was guest of honor at a dinner at the New Yorker Hotel, New York City, April 29, when a group of his metropolitan friends gathered to wish him godspeed on leaving civilian life to undertake his new Signal Corps duties.

### NEW BOOKLETS

Bogen's new Communo-phone catalog features the new deluxe system and also other industrial paging systems together with suggested installations and accessories to the system. Another catalog just released by Bogen is "The Blue Book of Sound Equipment" which gives specifications and illustrations of their line of sound systems, amplifiers, record players, baffles, speakers, mikes, and other sound accessories. David Bogen Co., Inc., 663 Broadway, New York, N. Y.

A new battery replacement chart for 1250 models of portable radios and a cross tabulated equivalent battery table is printed on one side of large heavy sheet suitable for wall mounting. Copies may be obtained from Radio & Technical Publishing Co., 45 Astor Pl., New York, N. Y. for 10c to cover mailing and handling.

The 1942 edition of the Sprague Manual of Radio Interference Elimination covers the problems of identifying, finding and curing many types of interference. Booklet is available from Sprague Products Co., N. Adams, Mass., or through jobbers for 25c.

Now available from distributors of Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York City, is a new parts catalog, describing and illustrating the firm's new line of replacement parts, with prices.

A 20-page booklet on phonograph needles, the care of records, and home recording is available from Duotone, Inc., 799 Broadway, New York City, for distribution to the consumer by dealers and distributors. Initial printing of 100,000 booklets is exhausted; a second printing is ready.



Radio Retailers, Service Men, Jobbers, Distributors, as well as manufacturers, unite on that name. LITTELFUSE means everything in reliability. A few from a Catalog full of items:



#### LITTELFUSE FUSE RETAINERS

To hang in cable. Model shown for all 3 AG fuses. Bayonet Lock end.  $\frac{9}{16}$ " diameter. Other models 1 AG to 8 AG for SFE fuses, 4 to 30 amps.

#### 8 AG METER BACK MOUNTING

Mounts directly on one meter binding post. Will not touch other posts on smallest standard meter.



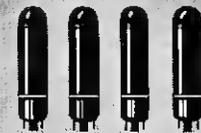
#### —and the LITTELFUSE Pocket Testlite!

Handy for testing radio frequency, tubes, home wiring, shorts, timing. 3 capacities: 3 to 25 volts; 6 to 50 volts; 60 to 500 volts.

Littelfuse Instrument Fuses, Panel Mountings, Clips, Extractor Posts, for every application and aircraft. Jobbers' lines can never be complete without Littelfuse. Send for Catalog.

### LITTELFUSE, INC.

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



#### 4 STANDARD TYPES

of Amperite Regulators replace over 400 types of AC-DC Ballast Tubes now in use.

Amperites are real REGULATORS have patented Automatic Starting Resistor which prevents initial surge and saves pilot light. Ask Your Jobber.

# AMPERITE

THE *Simplest* WAY TO REPLACE

# BALLASTS

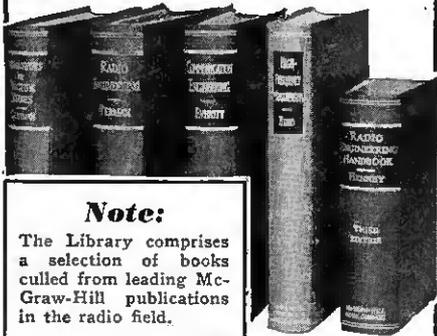
WRITE FOR REPLACEMENT CHART

AMPERITE CO. 561 BROADWAY, NEW YORK, N. Y.

**NOW**

a really high-powered

**RADIO  
ENGINEERING  
LIBRARY**



**Note:**

The Library comprises a selection of books culled from leading McGraw-Hill publications in the radio field.

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**5 volumes, 3559 pages, 2558 illustrations**

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Everitt's *Communication Engineering*, 2nd edition

Hund's *High Frequency Measurements*

Henney's *Radio Engineering Handbook*, 3rd edition

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Special price under this offer less than cost of books bought separately. In addition, you have the privilege of paying in easy installments beginning with \$3.00 in 10 days after receipt of books, and \$3.00 monthly thereafter. Already these books are recognized as standard works that you are bound to require sooner or later. Take advantage of these convenient terms to add them to your library now.

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**ON-APPROVAL COUPON**

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 Send me Radio Engineering Library for 10 days' examination on approval. In 10 days I will send \$3.00 plus few cents postage, and \$3.00 monthly till \$24 is paid, or return books postpaid. (We pay postage on orders accompanied by remittance of first installment.)

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Position .....

Company ..... RR-5-42

**RADIO MAN'S CAR  
OWNER  
ABSENT**

**PLEASE INFORM POLICE IF YOU SEE  
ANYONE TAMPERING WITH  
TIRES OR CAR**

Sign used by radio men to prevent tire thefts. Sign is carried inside car and is placed in window facing sidewalk, before locking and leaving car.

A number of radio men have written in to the editors, pointing out that great difficulties face radio servicemen in the near future, if they are not to be given a priority position in the purchase of tires for the cars in which they make their service calls.

We here at Radio Retailing Today recognize the serious situation which will soon confront the service man, and are taking steps to bring the radio man's claims to the attention of the authorities in charge of tire rationing.

In the meantime, radio men should do everything possible to conserve the tires they now have, by careful use and

by protecting them against theft. As one means to safeguard tires and car, we bring to your attention the form of anti-tampering sign which several western radio servicemen have been using since the tire situation became acute. In many cities organized thieves have been going about stealing spare tires and actually jacking up cars and stealing tires, wheels and all. A card like the above in the parked car, puts passersby on notice that the owner is absent and that the car is being molested by unauthorized persons. The presence of such a sign in the car will in many cases scare off thieves from attempting tire robberies.

**Display to Hike  
Book Sales**

A brand new counter display, available to dealers without charge is the attention-getting unit released by Radio & Technical Publishing Co., 45 Astor Place, New York City, featuring Ghirardi's 972-page "Radio Physics Course." The display is one of the string of sales aids centering around the "Silent Salesman" counter book display supplied to jobbers several months ago.

The new unit appears at a time when the interest in radio training is at an all-time peak, and also when dealers are looking for appropriate books to sell. It's a 4-color job in heavy cardboard, 20 in. by 14 in., richly varnished. The book price of \$5 is prominently shown.

Ghirardi's "Radio Troubleshooter's Handbook," the second addition which appeared last Fall, now has a second printing on the presses. The new book aims to help servicemen save more time, and besides its original contents, "will include data on equipment produced right up to the time when receiver production was stopped."

**Clarke for Dunco**

The new sales and engineering representatives in the Chicago area for Dunco relays and timing devices, is the John W. Clarke Co., 327 S. LaSalle St., Chicago. The appointment was announced by Charles A. Packard, sales manager for Struthers Dunn, Inc., Philadelphia, Pa.



## TOO TOUGH A JOB FOR A MAN!

**I**N MAKING RADIO TUBES, vital to the war effort, it is not a question of training women to do men's work. Assembly of the delicate, lace-like grids and tiny filaments needs the feminine touch! It's something like threading a needle a thousand times a day—and a mere *man* just can't compete!

Slim, swift fingers are what it takes to fashion the sensitive mechanisms that detect feeble radio waves and amplify them into sharp, clear signals. So go

ahead, men, with your rivet-hammers and punch-presses. But when radio, with split-second precision, delivers an urgent message or a broadcast program—or safely guides ship and plane—give thanks to a *woman's* skillful fingers!

Of the many thousands of workers in the RCA services, nearly two-thirds are women. Most of them do work essential to the war effort, and more efficiently than a man could do it.



## Radio Corporation of America

PIONEER IN RADIO • ELECTRONICS • TELEVISION

Radio City, New York



*you can  
still GET*  
**Motorola**  
AUTO RADIOS

**IF YOU ACT NOW**

**YOU CAN PROTECT YOURSELF FOR THE DURATION**

Hundreds of items are now on the "can't get" list. So quit fretting about your inability to get them...and concentrate on selling the merchandise you CAN GET! Motorola Auto Radios are now at the head of the list of items you can still sell and get. But protect yourself NOW! See your Motorola Distributor for *immediate delivery* of America's Finest Auto Radio.

**MILLIONS OF CARS ARE STILL ROLLING  
... AND WILL CONTINUE TO ROLL**

6 out of every 10 cars have no radio. Their owners will buy radios if you *ask them to buy!* There is a Motorola to FIT and MATCH *every car*, OLD or NEW. Promote car radio sales and PROFIT NOW!

**GET BUSY NOW—TODAY!** • Write or Phone Your Distributor

**GALVIN MFG. CORPORATION • CHICAGO**