



radio dealer

SALES AHEAD!

In Production . . .

In Shipment . . .

In Stock!



**October
1945
25c**

*Streamlined...
and Fool-Proof!*



MALLORY Replacement VOLUME CONTROLS

The perfect size for every application!



Precision-built like a fine watch!



Rugged strength for years of service!



The A-C switch that snaps on and stays on!



MALLORY Tapped Volume Controls have put an end to confusion and worries. Together with a surprisingly small number of plug-in shafts, they not only replace original controls but *duplicate* them mechanically and electrically. In fact, 16 controls fill approximately 85% of your replacement requirements!

Installation is easy and fool-proof, too! The plug-in shafts can't pull or twist loose. The A-C switch *snaps* on. There's no assembly work required!

What's more, Mallory controls mean quiet operation and gradual increase or decrease of volume. And they require a lower inventory investment than any other controls on the market! See your Mallory distributor. Have him help you select a streamlined kit to answer nearly all your service needs.

P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA



More than ever—
**ALWAYS
INSIST ON**

P. R. MALLORY & CO. Inc.
MALLORY
APPROVED
PRECISION PRODUCTS

VIBRATORS • VIBRAPACKS* • CONDENSERS
VOLUME CONTROLS • SWITCHES • RESISTORS
FILERS • RECTIFIERS • POWER SUPPLIES

ALSO MALLORY "TROPICAL" DRY BATTERIES, ORIGINALLY DEVELOPED BY MALLORY FOR THE U. S. ARMY SIGNAL CORPS. NOT PRESENTLY AVAILABLE FOR CIVILIAN USE.

*Trademark

SPARTON WAS READY WITH TELEVISION IN '39

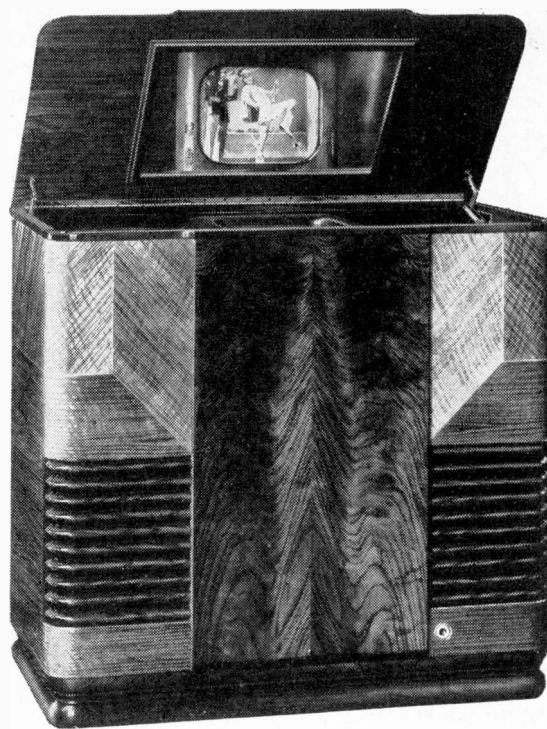
AWAY back in 1939, Sparton sold television sets. At that time only four other major manufacturers were ready with television equipment.

This is but one of many examples of Sparton's engineering initiative. Many radio firsts — contributions that helped sell radios in volume — are credited to Sparton technicians, i.e.: —

The first all-electric set; push button tuning and the Viso-Glo — so important to close tuning and better reception — were Sparton developments.

The engineers responsible for these outstanding selling features can be counted on to keep Sparton sets highly competitive.

Sparton radios are sold under the *SCMP to one dealer in each community. If you are interested in being the *exclusive* Sparton dealer in your community write—



Army-Navy "E" awarded five Sparton plants simultaneously for excellence in war production.

Mr. Ed. Bonia, Sales Manager

THE SPARKS-WITHINGTON CO., JACKSON, MICH.

SPARTON

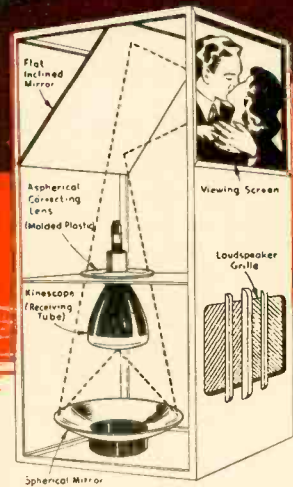
RADIO'S RICHEST VOICE SINCE 1926

* Sparton Co-operative Merchandising Plan

HERE'S WHAT YOU'LL GET FROM RCA IN PROJECTION- TELEVISION TUBES...



How the RCA Television Optical System Provides Newspaper-Size Images from a Specially Developed 5-Inch Kinescope Tube.



LOWER COST OF TUBES: Simple bulb design in soft glass lends itself to low-cost quantity production.

LOW-COST POWER SUPPLY: New electrostatic-focus electron gun avoids cost of a magnetic-focus coil and, at the same time, permits use of a low-cost power supply having moderate regulation.

HIGH CONTRAST AND HIGH LIGHT OUTPUT: New method of applying fluorescent particles to the glass face results in high contrast and high light output.

HIGH RESOLUTION: Improved gun design provides high resolution.

TAILORED TO PROJECTION OPTICS: Spherical face of RCA projection kinescopes matches RCA reflection-type optical system.

Already, RCA has demonstrated to hundreds of engineers and radio experts television of tomorrow as made possible by these new tubes. Screens as large as a news-

paper page, with clear, bright images, enable dozens of persons to see the program . . . and this is but one example of RCA electron-tube development, engineering and leadership.

Make sure you have the advantage of this leadership in building your radio and television service business. Carry the tubes with the best-known name . . . RCA.



RADIO CORPORATION OF AMERICA

TUBE DIVISION, HARRISON, N. J.

LEADS THE WAY . . . In Radio . . . Television . . . Tubes . . .
Phonographs . . . Records . . . Electronics

RADIO SERVICE DEALER

radio service dealer

Member Audit Bureau of Circulations.

Covers all phases of radio, phonograph, sound and electrical appliance merchandising and servicing

VOLUME 6 NUMBER 10

OCTOBER, 1945

CONTENTS

With the Publisher	9
In & Around the Trade	20
Increase Factors for Radio Parts	29
Industry Protests OPA Price Factors	29
Use Home Contacts to Increase Sales	30
Six Sales Floors	32
Plan Your Selling	34
Pointers on G.I. Business Loans	38
Radio for Vets	39
Sales Ahead!	40
Merchandise Pre-Views — 4	41
New Products	42
Don't Let Intermittents Get You Down!	46
Television Wrinkles	50
More Business with Detailed Repair Order	51
Service Market in Industrial Electronics	52
Circuit Court	56
Trade Products	72
Cover: Production for Dealers	

RADIO SERVICE DEALER (title registered U. S. Pat. Off.) is published monthly at Boston Post Road, Orange, Connecticut, by the Cowan Publishing Corp. Executive & Editorial Offices, 342 Madison Avenue, New York City 17, New York. Publication Office, Boston Post Road, Orange, Conn. Subscription rates:—United States and Possessions \$2.00 for 1 year, \$3.00 for 2 years; elsewhere \$3.00 per year. Single copies: 25c. Printed in U. S. A. Entered as Second Class Matter at the Post Office at Orange, Connecticut, under the Act of March 3, 1879. All subscribers should allow at least three weeks for change of address. Copyright, 1945

COWAN PUBLISHING CORP.

SANFORD R. COWAN,
Publisher

LEWIS C. STONE
Editor

IRVING N. COOPER, Advertising Sales Mgr.
HARRY N. REIZES, Eastern Adv. Mgr.
JEAN M. WHEELER, Circulation Manager
MARY E. MADER, Advertising Prod. Mgr.

Branch Offices

HAROLD J. SUGARMAN, Western Adv. Mgr.
65 E. South Water St., Chicago, Ill.

H. W. DICKOW, West Coast Advtg. Mgr.
1387 40th Ave., San Francisco 22, Cal.

10,000 PARTS

Ten thousand different radio and electronic parts
immediately available on priorities

FAST SERVICE

Trained expeditors select and ship same day
your order is received

SINCE 1922

Known since 1922 as reliable jobbers, wholesalers and
manufacturers of radio and electronic equipment

*Radio Wire
Television Inc.*

World's Largest Radio Supply House
100 Sixth Ave. (Dept. S-10) New York 13, N. Y.
Boston, Mass. Newark, N. J.

Originators and Peace-time Marketers of the Celebrated

Lafayette Radio

Write today for our bargain flyers and special bulletins

**MECK DEALERS
ARE**

First



—in Meck National Advertising



—with the Merchandise

and FIRST with a price

First radio sets to receive price approval . . . Meck Radios are now in Meck Dealers' hands . . . Proof again that Meck Production and Sales Policies are engineered for the benefit of Meck Dealers.

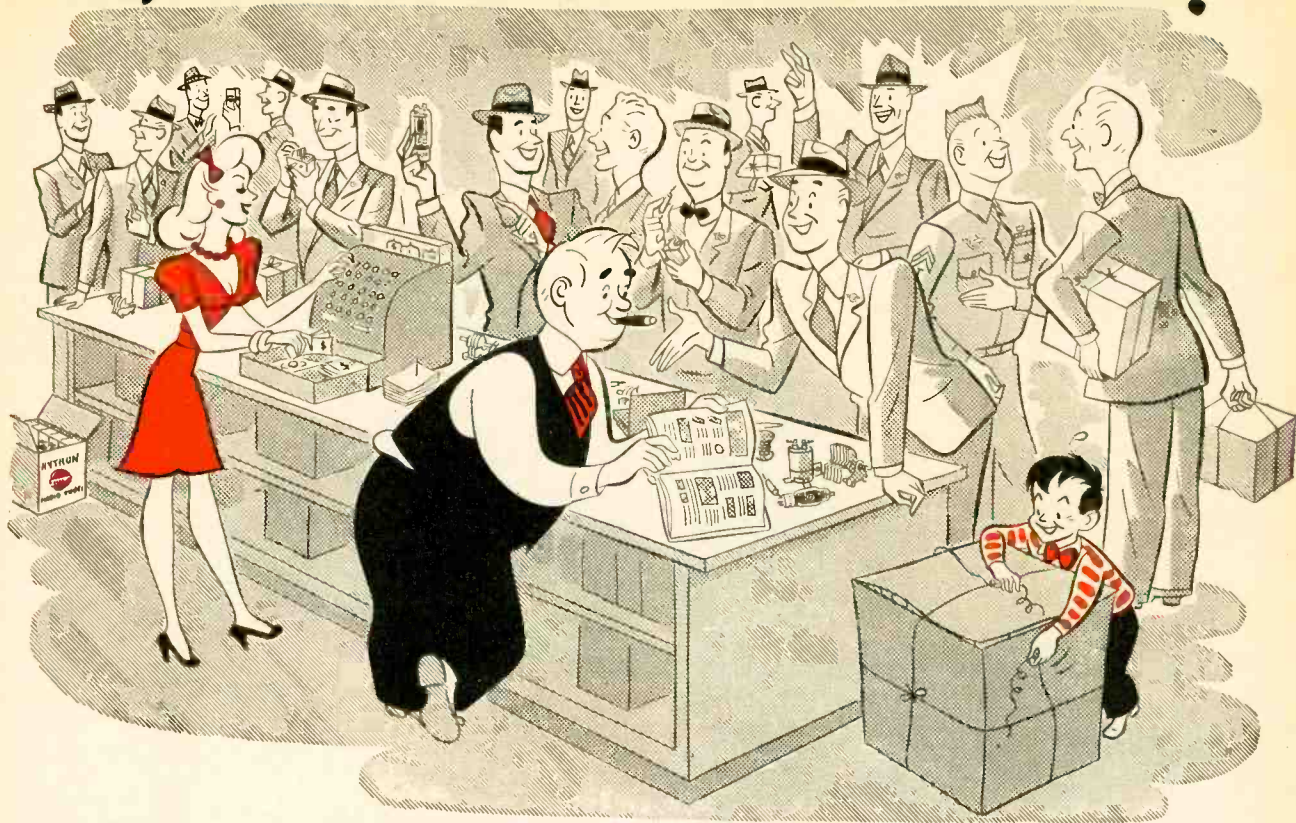
Cash in on this big program . . . Ask your Meck Distributor.



MECK RADIOS

TABLE MODELS • PORTABLES • AM-FM • TELEVISION
CONSOLE COMBINATIONS • PHONOGRAPHS

YES, THE "HAMS" ARE COMING BACK IN DROVES!



With the re-opening of the $2\frac{1}{2}$ meter band, you have probably felt already the initial impact of a tremendous "ham" buying surge. This demand will mount rapidly during the coming months. Before the war there were 60,000 licensed radio amateurs in the United States. QST estimates a growth to 250,000 within five years. The ham market can mean real profits for you.

Hytron is paving the way for you. A brand new Hytron transmitting and special purpose tube catalogue has just been published. It is written for the ham in ham language. A two-page spread is scheduled for the 1946 ARRL handbook. September and October issues of QST carry full-page advertisements featuring the new Hytron OA2, OB2, and 2E25.

The Hytron transmitting and special purpose tube line is complete. Particularly stressed are the low and medium power tubes the average amateur wants to buy. Hytron has an established and enviable reputation for very-high-frequency tubes like the HY75, HY114B, and HY615. WERS amateur operators used these tubes almost exclusively during the war. The tubes are not obsoleted by the new amateur band changes to 144-148 mc. and 220-225 mc.

Wartime experience is helping Hytron engineers to maintain their lead on the higher frequencies. New Hytron v-h-f and u-h-f tubes are now in the works. Prepare to meet the snowballing amateur demand for Hytron tubes. Round out your stock today. Plan to add the new types as they are announced.



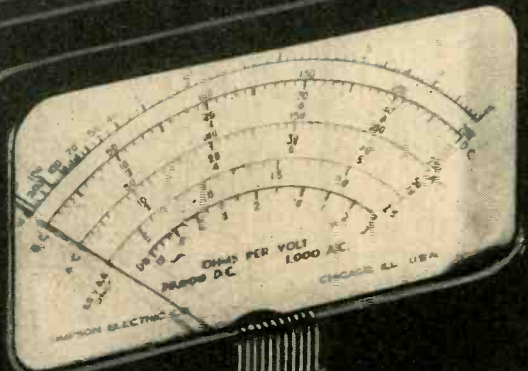
OLDEST MANUFACTURER SPECIALIZING IN RADIO RECEIVING TUBES

HYTRON

RADIO AND ELECTRONICS CORP.



MAIN OFFICE: SALEM, MASSACHUSETTS



100 μA
100 MIC. A.
R=10,000
R=10,000
A.C. - 2.5 V. (RMS)
10 V. (RMS)
50 V. (RMS)
250 V. (RMS)
1000 V. (RMS)
SIMPSON ELECTRIC CO., CHICAGO, ILL.
MODEL 200



The most honored instrument of the war

This is not our own appraisal of the Simpson 260. We knew, before the war, that it was a fine instrument but, frankly, we didn't know *how* good it was until war wrote the record. Now the story of the 260 is written into the records of such wartime industrial developments as that of synthetic rubber, and into the vast and secret research and servicing of radar.

Originally designed as a radio serviceman's test unit, the Simpson 260, because of its sensitivity and wide range was found adaptable to general service duties in the entire electronics and electrical fields. Not a warborn instrument, the 260 was given thousands of essential war jobs in the production and servicing of communications equipment. It made a vital contribution to the success of tactical operations.

Over 300 government agencies and university laboratories of the United States and Canada procured every one of these test instruments Simpson could deliver on an expanded war production schedule. They were turned out by the thousands. Every

branch of the armed services—Army, Navy, Marines, Coast Guard—carried them to the far ends of the earth. They were compelled to perform under conditions often so arduous that testimonials of amazement at their ability to function at all became commonplace as the record grew.

Chosen on its merits, the Simpson 260 became uniquely *the* test instrument of the war.

AVAILABLE NOW TO YOU

Now the Model 260, always the preferred instrument of radio servicemen, is available again to a widened field of peacetime services. We ask you to remember its record as an example of the quality and advanced engineering that goes into all Simpson instruments, as evidence that other new Simpson developments are well worth waiting for. They will be released as soon as Simpson standards for their manufacture are satisfied. They will continue the leadership that has given Simpson a world-wide reputation for "instruments that *stay* accurate" with ideas that *stay* ahead.

SIMPSON ELECTRIC COMPANY
5200-5218 W. KINZIE ST., CHICAGO 44, ILL.

Simpson

INSTRUMENTS THAT STAY ACCURATE

SIMPSON 260, HIGH SENSITIVITY SET TESTER FOR TELEVISION AND RADIO SERVICING Ranges to 5000 Volts—Both A.C. and D.C. 20,000 Ohms per Volt D.C.—1000 Ohms per Volt A.C.

At 20,000 ohms per volt, this instrument is far more sensitive than any other instrument even approaching its price and quality. The practically negligible current consumption assures remarkably accurate full scale voltage readings. Current readings as low as 1 microampere and up to 500 milliamperes are available.

Resistance readings are equally dependable. Tests up to 10 megohms and as low as 1/2 ohm can be made. With this super sensitive instrument you can measure automatic frequency control diode balance-

ing circuits, grid currents of oscillator tubes and power tube, bias of power detectors, automatic volume control diode currents, rectified radio frequency current, high- μ triode plate voltage and a wide range of unusual conditions which cannot be checked by ordinary servicing instruments. Ranges of Model 260 are shown below.

Price, complete with test leads.....\$33.25
Carrying case 4.25

ASK YOUR JOBBER

Volts D.C. (At 20,000 ohms per volt)	Volts A.C. (At 1,000 ohms per volt)	Output	Milliamperes	Microamperes	Ohms
2.5	2.5	2.5 V.	D.C.	100	0-1000 (12 ohms center)
10	10	10 V.	10	100	0-100,000 (1200 ohms center)
50	50	50 V.	500		0-10 Megohms (120,000 ohms center)
250	250	250 V.			
1000	1000	1000 V.			
5000	5000	5000 V.			

(5 Decibel ranges: -10 to +52 DB)

WATCH FOR NEW SIMPSON DEVELOPMENTS. THEY WILL BE WORTH WAITING FOR!

IRC PRESENTS



the "Book of the Year"

FOR SERVICEMEN

Get your free copy from your
IRC Distributor or write direct

UP TO THE MINUTE DATA ON IRC RESISTORS

Every well-posted Serviceman will want his own personal copy of this new IRC Service Catalog. Profusely illustrated with useful charts, diagrams, tables and product pictures, it contains the kind of material a busy man likes to have right at his fingertips.

Among the interesting features of this catalog you'll find the complete story of the new smaller size BTS ($\frac{1}{2}$ watt) and BTA (1 watt) resistors, as well as useful data on the entire BT and BW resistor lines. Now in RMA Preferred Number Ranges as standard Dis-

tributors' stock, these quality resistors are quoted at new low prices.

Also included are pertinent facts on IRC's "Century Line" of volume controls . . . 100 controls that will solve over 90% of your problems in this category. But these are only the highlights of this helpful new catalog. You'll want to see and read it all.

Make sure that you get your copy by stopping in at your nearest IRC Distributor or, if more convenient, drop a card to Dept. 22-J.

International Resistance Co.

401 NORTH BROAD STREET, PHILADELPHIA 8, PA.



IRC MAKES MORE TYPES OF RESISTANCE UNITS, IN MORE SHAPES FOR MORE APPLICATIONS THAN ANY OTHER MANUFACTURER IN THE WORLD



with the publisher.....

Pricing Snarls Deliveries

OPA ADMINISTRATOR Chester Bowles is on a "hot seat" at the minute. His office recently notified manufacturers in various industries what maximum prices could be charged for their wares. Radio-appliance manufacturers were given price schedules approximating 8% higher than their 1942 ceilings. Then hell broke loose.

Manufacturers know that on the average it costs them about 22% more to produce any given item now than it did in 1942. Notwithstanding the fact that manufacturers now have better know-how, faster and more accurate automatic production machinery and more efficient staffs than ever before—all these are offset by much higher labor and material costs. Add to this the fact that labor is ever demanding higher wages and shorter hours, which will increase production costs even more.

The Administration, for which Mr. Bowles is spokesman, has committed itself to preventing inflation—a most laudable policy. Manufacturers, on the other hand, must sell goods at a profit or go out of business. There you have it! Government says, "You can't charge more" and

Business replies "We can't sell at those prices and survive". It's a deadlock at this minute, with neither side giving in to the other. Paradoxically, both sides are right, both are sincere.

As a result of the deadlock practically the only consumer durable goods production now under way is floor samples for dealers, parts makers being willing to take a small loss in "the interim period" so that assemblers will be able to give samples to dealers. Production sufficient to allow actual sales to the public is not now even being attempted in most cases, and retail prices have not as yet been determined. The general public doesn't know this condition obtains. We wonder what its reaction would be if it did.

Mr. Averageman does not want to pay more for commodities. He doesn't want manufacturers to go broke. He *does* want a compromise to be reached quickly. He wants merchandise. He realizes that if factories stop work unemployment will increase and within a very short time chaos will reign. A compromise period of, let us say, six months, might be the answer. But it must be effected immediately before factories close down.

It Is Time To Start Repricing

EVERYTHING costs more today than it did several years ago. The degree of inflation might have been much worse, and for that slight blessing we are grateful. Service Dealers are now entitled to relief from the Maximum Price Schedules in effect. No, we do not favor inflation. We do advocate fair-play. For over three years most Service Dealers worked for starvation wages, figuratively speaking, because they were caught with their prices down back in '42. Employed technicians haven't fared too badly, these last few years, as their increased salary demands were met by employers. We campaign for in-

creased prices for servicing work on behalf of the Independent Serviceman or Service Organization, most of which are one and two-man shops. They are typical middle-class workers, who as statisticians know, bear the brunt of increased costs, taxes, et cetera while forced to work for prewar scales of pay.

The answer lies in revising hourly rate price schedules. Today a service dealer who specializes in servicing and a retail store that maintains a service department *must* function on a profitable basis and that is only possible when price schedules are predicated upon their current costs, which in most instances are approximately 26% higher than in 1942.

"Kickoff" Models

MOST manufacturers have a "kickoff" line intended to alleviate the current shortage of consumer goods. These products are merely prewar models dressed up a bit, and are only intended to hold a manufacturer's trade position until he can get into full production of genuinely planned postwar models.

It would be foolhardy for a dealer to refuse

to put 100% sales effort behind whatever "kick-off" merchandise he can get for immediate sale, but one must not lose sight of the fact that soon better and higher priced merchandise will be available—and that is the kind of commodity the public really wants.

S. R. Lowan

3 BIG STEPS AHEAD!

IT'S engineering that counts these days—and it's engineering that Sprague Electric Company gives you in fullest measure! From the smallest Sprague tubular or Atom replacement type to unique, giant capacitors developed for difficult war services, you'll find Sprague engineering leading the way in assuring such essential characteristics as greater dependability in smaller size, longer life, and outstanding electrical performance.

The three exclusive Sprague developments shown here are typical of many that have played a big part in helping Sprague become a FIVE TIME WINNER of the coveted Army-Navy "E" Award. And they're typical of the kind of engineering that goes into every Sprague Capacitor or Koolohm Resistor that leaves the plant!

See the Sprague Trading Post
Advertisement on Page 55

Harry Kalher
Sales Manager

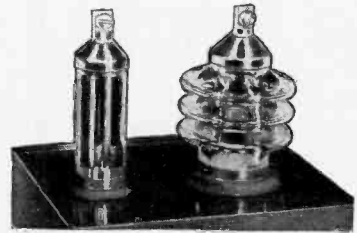
SPRAGUE PRODUCTS COMPANY
North Adams, Mass.

(Jobbing Sales Organization for Products of the Sprague Electric Co.)

SPRAGUE



1 *VITAMIN Q. This unique impregnant is Sprague's answer to high-voltage, high-temperature problems. Although small in size, Vitamin Q Capacitors operate satisfactorily at thousands of volts at ambients as high as 105° C. Leakage resistance at room temperature is 20,000 megohms per microfarad—at least five times better than that of previous types!



2 GLASS-TO-METAL SEALS

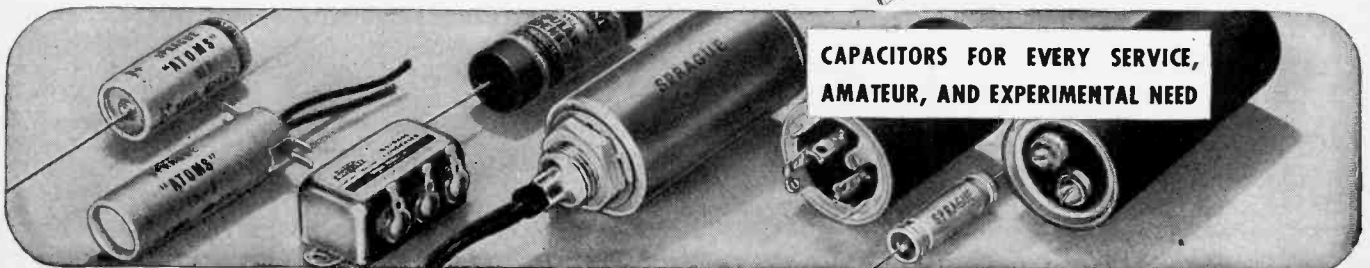
Under this exclusive Sprague method, glass capacitor bushings are welded directly to the metal container. On certain Sprague Koolohm Resistor types, the units are encased in glass tubes which are then processed to the metal ends. The resulting seals are leak-proof, shock-proof, humidity-proof and fungus-proof!

3 *CEROC 200

Much electrical equipment can now be designed for 200° C. continuous operation, thanks to Sprague CEROC 200, a Class C flexible ceramic insulation for wire. Smaller equipment can be designed to do bigger jobs.



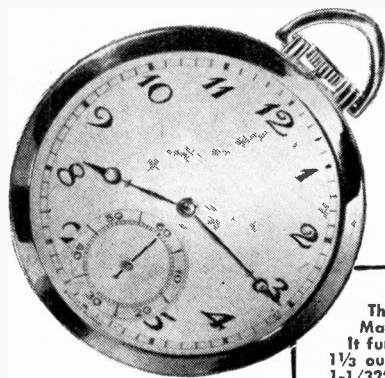
*Trademarks registered
U. S. Patent Office



**CAPACITORS FOR EVERY SERVICE,
AMATEUR, AND EXPERIMENTAL NEED**

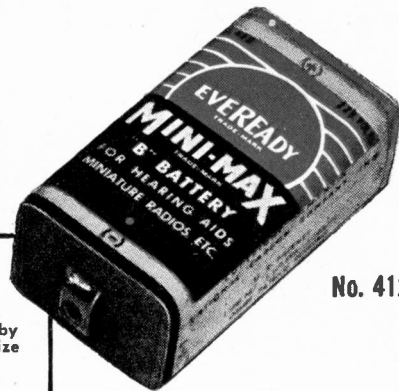
NEW "EVEREADY" "MINI-MAX"

"B" Battery has started Engineers figuring



ACTUAL SIZE

This is "Eveready" "Mini-Max" "B" Battery No. 412. It furnishes 22½ volts, weighs 1½ ounces. Dimensions are 2" by 1-1/32" by 5/8". Compare its size with that of a pocket watch.



No. 412

WE BELIEVE IT WILL START YOU FIGURING TOO!

THIS is the latest "Mini-Max" 22½ volt "B" Battery made with National Carbon Company's exclusive construction. It is a challenge to the best inventive brains in the radio and electronics fields.

Why? Because this "Mini-Max" battery packs 22½ volts into the smallest unit ever dreamed of—well under half the size of anything of comparable voltage!

Imagine a battery as light and easy to carry as a pocket watch. Imagine what it means to portable radios and many electronic devices. It means sets that will be carried among the individual's personal effects—sets small enough to go into vest pocket or handbag. It means a whole new world of merchandise—new customers—new opportunities.

And to speed these important developments in your postwar business, National Carbon Com-

pany, Inc. invites the engineers and designers of America to consult its technical advisors...take advantage of its laboratory facilities and experience. From such cooperation can come important new merchandise for the future of the industry.

EVEREADY
TRADE-MARKS

MINI-MAX

RADIO "B" BATTERIES

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

General Offices: NEW YORK, N. Y.

The words "Eveready" and "Mini-Max" are registered trade-marks of National Carbon Company, Inc.

The easiest tube to sell...

because the G-E monogram is a household symbol of dependability



The people at the right all require new radio tubes from time to time . . . and they are favorably disposed to G.E. because *that's the name that spells quality and dependability to them!* Multiply such radio-owners by millions, and you have America's biggest tube market. YOU can share importantly in that market, and in the profits that go with it. Arrange to stock and sell G-E tubes as a top money-making opportunity for you. Write for information about G-E tube selling rights to *Electronics Department, General Electric Company, Schenectady 5, N. Y.*

Hear the G-E radio programs: "The World Today" news, Monday through Friday, CBS. "The G-E All-Girl Orchestra," Sunday, NBC. "The G-E House Party," Monday through Friday, CBS.

GENERAL ELECTRIC

176-D4-8 850



MOTHER relies on her G-E radio for household hints. The refrigerator and electric iron which she uses also carry the G-E monogram.



FATHER listens regularly to G-E newscasts. General Electric is a familiar name to him; he has bought G-E lamps as long as he can remember.



SON TOM is interested in amateur radio work. Tom knows electricity and electronics—knows that General Electric leads in both.



DAUGHTER PEGGY carries her G-E portable radio everywhere. Peggy has a G-E fan in her room—a G-E fluorescent lamp over her vanity table.



AUNT AND UNCLE are music-lovers. Their G-E radio-phonograph has given them many hours of pleasure. Buying G-E is second nature with them.



Here's a man you know—too well. The Japanese China-doll by his side is his wife.

This is not the opening scene in a puppet show. You will notice there are no strings attached to either of them, especially to the little man with the glasses. He does not operate by pulled strings. Instead, he pulls the strings. Those strings are not visible either.

When we say Hirohito pulls the strings there's no tongue in our cheek. We're banking on the words of a man who knows—a man who was there.

His name is John Williams, a man who kept watch on the Japanese menace during years of newspaper work throughout the Pacific area.

He was one of the men who helped organize a counter-Jap network in the Pacific.

"The American people are being fooled about the real war role of Hirohito, 'God'-emperor of Japan"—and Williams doesn't mince any words in telling why we're being fooled in his article, "Hirohito...Booby Trap For Americans," appearing in the October issue of TRUE.

Sound, timely articles like this one are a big reason why men read TRUE, The Man's Magazine. It's exciting, adventurous—so TRUE-ly adventurous that 750,000 fellows step up to their newsstands each month and plank down their 25¢ a copy. They like it because it's real—real TRUE from front to back.

750,000 fellows will buy the October issue of TRUE. (A million in December)

The December TRUE will carry more than 70 pages—30,000 lines of advertising.

40 men's wear advertisers—25 liquor advertisers—more than 130 different advertisers spending nearly \$300,000 are using TRUE this year.

There's nothing like TRUE—for you.

A *true* AD-VENTURE



Charley Jacobs, Advertising Manager of Klein's Sporting Goods, Chicago, writes: "You might be interested in knowing the results of our first advertising venture in TRUE. We ran a 92-line ad on Jungle Boots at \$4.95 in your May issue; up to July 23, we have sold 220 pairs."

(Ed. addition: Klein's 21-line ad in July had pulled 337 requests for their 25-cent catalog by July 27!)



The Man's Magazine *true*

FAWCETT PUBLICATIONS, INC.

295 Madison Avenue, New York 17, N. Y.

WORLD'S LARGEST PUBLISHERS OF MONTHLY MAGAZINES

sells men

SELL RCA

ENGINEERED FOR RADIO AND BACKED BY THE BIGGEST NAME IN RADIO!

RCA batteries give you an outstanding sales-volume builder

1. CUSTOMER ACCEPTANCE — RCA is the greatest name in radio. Your customers know that the RCA label means a quality product.

2. CUSTOMER SATISFACTION — RCA batteries are *Radio-Engineered* for extra listening hours. If RCA engineers have put their OK on a radio battery — 'nough said.

3. SMALL INVENTORY REQUIRED — Only 35 RCA *Preferred-Type* batteries fit 99% of all battery-operated radios. You can meet all customers' requirements with a minimum inventory investment. Also gives fast turnover of fresh batteries.

4. DOUBLE PULLING POWER — RCA batteries and RCA tubes give your customers two reasons to come to you.

5. CUSTOMER PREFERENCE — Smart packaging, competitive prices, RCA quality, extra listening hours, and "engineered for radio," add up to predominant customer preference.

Listen to
"THE RCA SHOW",
Sundays, 4:30 P. M.,
EST, NBC Network

62-6736-105



RADIO CORPORATION OF AMERICA

TUBE DIVISION • HARRISON, N. J.

LEADS THE WAY... In Radio... Television... Tubes...
Phonographs... Records... Electronics

BATTERIES



RCA Radio-Engineered Batteries for All Types of Sets
...and a Complete Line of Other RCA Dry Batteries

BUY VICTORY BONDS

AND HERE'S WHAT TO DO ABOUT IT . . .

If you have not already done so, mail this coupon to your RCA tube distributor today. It's your request for a personal preview of RCA's battery plans for you. He will send you a complete explanation, telling just what to do to get set for big profits from RCA batteries.

MAIL THIS RESERVATION TODAY!

Dear Mr. RCA Tube Distributor:

I'm interested in increasing my battery profits by handling the new line of RCA Radio-Engineered batteries. Please mail me all details of the RCA battery plan as soon as possible.

Name

Company

Address

How the RCA type

162-C

CHANALYST

Helps Radio Men
Do Many Jobs



FASTER and **EASIER**



THE RCA Type 162-C *simplifies* and *speeds up* many types of radio design, testing and repair jobs—saves worry, work and time.

Shown here are pages from a bulletin that tells why you need the Chanalyst...what it does...how to use it.

This bulletin is interesting—instructive—and it's yours for the asking. Write for it, or fill in and mail the coupon below and we'll promptly send you your copy.

True, RCA Chanalysts may still be hard to get in your locality. But you can get in line to own one by consulting your RCA Test Equipment Distributor about this labor-saving, money-saving instrument. Send for the bulletin...today.

TEST AND MEASURING EQUIPMENT SECTION

Radio Corporation of America
Camden, N. J.

Please send me more information about the RCA 162-C CHANALYST.

Name.....

Street Address.....

City and State.....



RADIO CORPORATION OF AMERICA

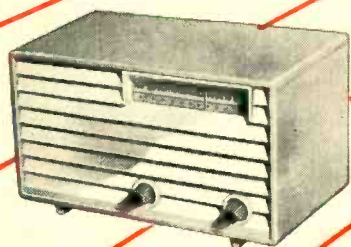
RCA VICTOR DIVISION • CAMDEN, N. J.

In Canada, RCA VICTOR COMPANY LIMITED, Montreal

RADIO SERVICE DEALER



TRUE BEAUTY IS *AGELESS*



● Symbolizing Winged Victory, Nike from Samothrace is a masterpiece of sculpture of 280 B.C., treasured throughout the ages by all peoples for sheer, simple, lasting beauty.

Pride of craftsmanship is represented by idealism in conception and execution of Detrola radio receivers, automatic record changers and other electronic instruments . . . all of unsurpassed beauty and value . . . developed especially for the world's outstanding merchants and their customers.

DETROLA RADIO DIVISION  OF INTERNATIONAL DETROLA CORPORATION, DETROIT 9, MICHIGAN

Detrola Radio

In & Around the Trade

Being a condensed digest of production, distribution and merchandising activities in the radio and appliance trade.



Listening-in to phono part of new (Maguire Industries-controlled) "Meissner" radio combination, in Chicago sales headquarters, (l. to r.): E. J. Stanmyre, chief engineer; James T. Watson, vice president in charge of plant (formerly Meissner president); G. V. Rockey, vice president in charge of sales (formerly Meissner executive vice president). A "first" photo release of new sets.

Admiral Remodels

Admiral Corporation has consolidated its main offices in its principal plant at 3800 W. Cortland St. Space previously occupied at 444 Lake Shore Drive will be taken over in its entirety by Appliance Distributors, Inc., the company owned distributor of its products in the Chicago area. Extensive remodelling at the Cortland Street plant is still in progress, and when completed will include a model kitchen, special display and testing quarters, and additional engineering research accommodations.

Emerson Acquires Radio Speakers

Emerson Radio & Phonograph Corporation announces the acquisition of 100 per cent of the authorized and issued capital stock of Radio Speakers, Inc., Chicago, Illinois. Radio Speakers, Inc., has for many years been one of the largest and most progressive producers of quality radio speakers. It is expected that the huge demand for radios will increase the

company's production beyond all previous marks.

Small Appliance Clinics

Proctor Electric Company, of Philadelphia, held the third in its series of Postwar Retailing Clinics for Small Appliances in Savannah last month, chaired by Robert M. Oliver, vice president in charge of sales of the company, assisted by Major Oswald MacCarthy, eastern regional sales manager, and A. H. Patton, Atlanta district manager.

With the advent of V-J Day and the possibility of small electrical appliances being available in substantial quantities by the end of this year, the Savannah clinic sought to obtain the opinion of veterans as to how manufacturers can help them in the postwar small appliance field. Fifteen dealers, from the Southeastern area, outstanding representatives in their particular field, participated:

J. R. Lofton, Lofton Electric Co., Albany, Ga.; H. B. Greenebaum, Chatham Furniture Co., Savannah,

Ga.; John B. Duff (veteran), Modern Radio & Appliance Corp., Savannah, Ga.; John Powell, Randall Electric Co., Spartanburg, S. C.; L. B. Hood (veteran), Smith-Wadsworth Hardware Co., Charlotte, N. C.; C. J. Lyon, Lyon Furniture Co., Decatur, Ga.; J. P. Doolan, Doolan Fixture Co., Florence, S. C.; E. C. Downing, Downing Electric Appliance Co., Greenville, S. C.; T. W. Zeigler, Zeigler Radio Co., Charleston, S. C.; H. H. Holt, Holt Hardware Co., Atlanta, Ga. D. P. King, King Furniture Co., Bennettsville, S. C.; Durwood Eubanks, Eubanks Appliance Co., East Point, Ga.; Jack M. Levy, Levy Jewelry Co., Savannah, Ga., and T. M. Nash, National Manufacture & Stores Corp., Atlanta, Ga.

The Proctor clinic is a strictly dealer-run affair, the company providing the facilities and channeling the discussions along the line of the questions submitted. The findings of this clinic and those of the two previous clinics held at Hershey, Pa., and Chicago, Ill., will be incorporated in a primer for the guidance of dealers and veterans who might wish to enter the small appliance field.

Ken-Rad Manager

J. M. Lang has been appointed manager of the Ken-Rad Division of the General Electric Company's Electronics Department, with headquarters at Owensboro, Ky. This announcement has been made by George W. Nevin, manager of the Tube Division here, who is also responsible for the Ken-Rad operation. In this capacity, Mr. Lang will be in charge of the operations of G-E Ken-Rad plants in Owensboro, Ky., and Huntingburg, Ind., and will also be responsible for the management of government-owned G-E tube plants at Bowling Green, Ky., and Tell City, Ind.

Raytheon V.P.

Laurence K. Marshall, president of Raytheon Manufacturing Co., announces that Ray C. Ellis, former director of the W.P.B. radio-radar division, has been appointed vice-president of Raytheon. Mr. Ellis is a native of Warren, Mass., and attended Massachusetts Institute of Technology and Tri-State College.

From 1930 to 1941 he was with General Motors Corp. In 1942 he became director of the W.P.B. radio and radar division. In addition to correlating the electronic production facilities in the United States, he made extensive trips to England and Russia, assisting those countries in the scheduling and production of electronic equipment. [Continued on page 22]

SYLVANIA NEWS

RADIO RETAILER EDITION

OCTOBER Published by SYLVANIA ELECTRIC PRODUCTS INC., Emporium, Pa. 1945

PROFIT PERIOD FAST APPROACHING AS WHEELS OF RADIO INDUSTRY BEGIN TO TURN FOR PEACE

60 MILLION TUBES TO BE NEEDED, ESTIMATE SHOWS

Sylvania Retailers May Double Prewar Business

In 1941, about 34 million replacement tubes were sold. In contrast to this is the recent authoritative report (from one of America's leading research organizations) that no fewer than 60 million replacement tubes will be required to handle the expanding radio market. This means that the Dealer and Serviceman can look forward to about doubling their prewar tube replacement business.

In addition to this, is the widespread acceptance of record players, FM and television. It has been estimated that within a few short years, approximately 75 million home radios plus 25 million auto sets will be sold.

These facts not only back up the estimated tube replacement sales, but indicate the extent to which the demand for electrical and mechanical parts will be boosted. As far as the radio tube market is concerned, the radio retailer *knows* he can depend on the high quality standards and large production facilities of Sylvania Electric.

DID YOU KNOW...

Ninety per cent of Sylvania's radio tube production went toward hastening the day of total victory. (Each B-29 used 700 radio tubes!)

Retailers Assured Of Receiving High Quality Sylvania Tubes To Meet Rising Demand

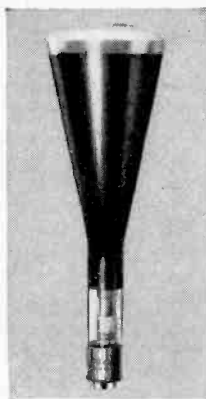
As the period of reconversion gradually takes active form and spreads over the nation, the radio industry can look forward to one of the most profitable spans in its history. Millions are waiting for radio sets of improved design. Meanwhile millions of sets are in need of repairs.

This peace-time expansion means a *profit* period for Sylvania radio retailers everywhere. Backed up by Sylvania's more than 40 years' research and experience in manufacturing, the radio retailer can with confidence look forward to the expansion of his business. Note this list:

Television: experience in design and the production of untold thousands of Sylvania Cathode Ray Tubes for war requirements have contributed greatly to peace-time applications.

High frequency sets (FM, television): the Sylvania Lock-In Tube is so electrically and mechanically perfect in construction that it can handle ultra-high frequencies with ease.

Radio: manufacture and distribution of the famous high quality Sylvania lock-in, "Glass" and miniature tubes will continue to satisfy the exacting circuit requirements



CATHODE RAY TUBES



LOCK-IN RADIO TUBES

of modern radio receivers.

Now that the go-ahead signal has been given to the radio industry, retailers know they can depend on the same Sylvania Electric wide-scale production facilities that have served our government so well.



"GLASS" RADIO TUBES

SYLVANIA ELECTRIC

Emporium, Pa.

MAKERS OF RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES; FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS

In Trade

[from page 20]

RCA Centralizes Tubes

Organization of the RCA Tube Division to embrace all electron tube activities of the company, with L. W. Teegarden as General Manager, has been announced by Frank M. Folsom, Executive Vice President of the Radio Corp. of America in charge of the RCA Victor Division. The new Tube Division provides for complete inte-

gration and coordination of RCA's extensive tube and tube equipment engineering, manufacturing, and sales activities. Plans call for the transfer of the division's headquarters from Camden to Harrison, N. J., in the early future.

Lear Appoints

Homer Morgan Snow has been appointed advertising and public rela-

tions director of the Radio Division of Lear, Incorporated, it is announced by William P. Lear, president. Mr. Snow will be located in the New York offices of the company at 1860 Broadway. Before coming to Lear, Mr. Snow was with Lennan & Mitchell, Inc., where he supervised the Market Research and Sales Analysis operations of a three-year distribution study of the Radio Home Receiver business which this agency conducted for the General Electric Company. Previous to that, he spent some eleven years as Advertising Sales Promotion Manager for the American Home, House Beautiful, and Redbook Magazines, respectively. In addition, Mr. Snow brings to the Lear organization many years of experience in retail advertising and merchandising, gained with leading department and home furnishings stores in New York and Boston.

Consumer Booklet

The Electronic Corporation of America, in peacetime makers of a complete line of home radios, has announced the publication of a booklet, "The Amazing Electron," for distribution to educators, consumer organizations, farm groups, and labor unions, and the general public. Copies are also being supplied to ECA Radio franchised dealers for consumer distribution. Profusely illustrated in cartoon technique, and simply written, the booklet is intended to bring within the grasp of everyone the basic facts about electronics.

According to Samuel J. Novick, president of ECA, "We are entering an electronic age, and every industry, indeed our whole economic and social life will be changed for the better. But unless the general public is kept aware of this expanding frontier of science and industry, business will not reap the full benefits that are possible."

Copies can be obtained from the company, 45 West 18th Street, New York 11, N. Y., free of charge to individuals and in quantities of 20 or more, for a five cent handling charge.

Traffic Appliances

Universal's first models in heating, or so-called traffic appliances, to come off production lines when reconversion has been completed and materials are available, will follow rather generally pre-war patterns sold in 1942, except for minor improvements which can be readily incorporated according to E. J. Van Buskirk, vice president in charge of Heating Appliance Sales.

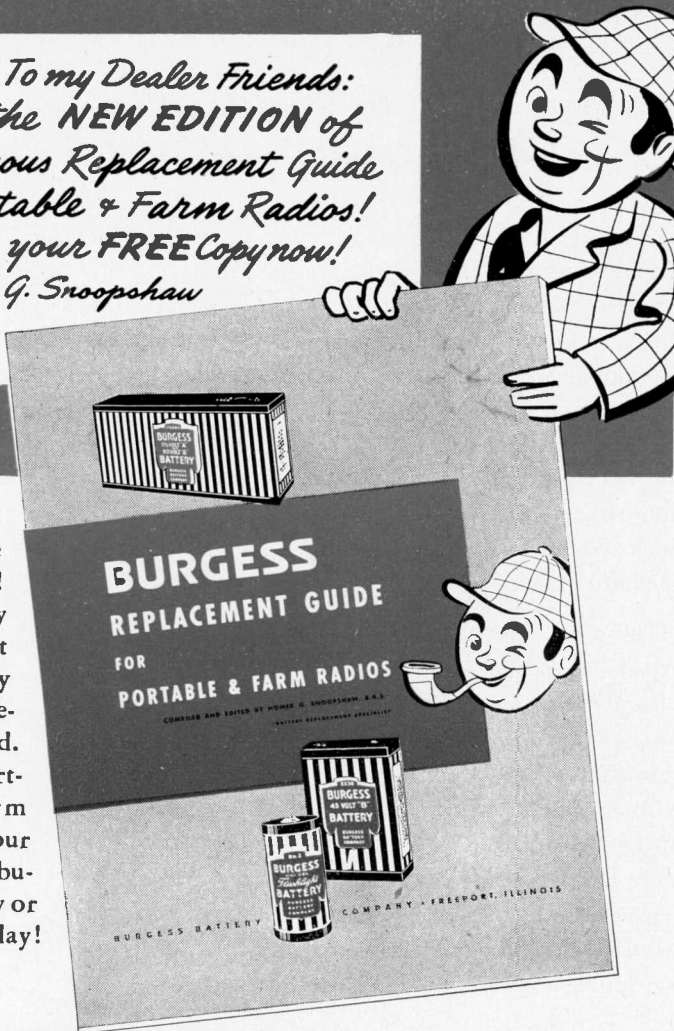
The heating appliance line will include several models of electric irons, toasters, waffle irons, sandwich grills,

[Continued on page 26]

RADIO SERVICE DEALER

MEMO To my Dealer Friends:
Here's the **NEW EDITION** of
my famous **Replacement Guide**
for **Portable & Farm Radios!**
Ask for your **FREE** Copy now!
Homer G. Snoopshaw

Saves time and trouble! You quickly find the correct Burgess Battery for every radio replacement need. Lists 1000 Portable and Farm Radios. Ask your Burgess distributor for your copy or send coupon today!



BURGESS BATTERIES

HOMER G. SNOOPSHAW, Dept. 6, Burgess Battery Company, Freeport, Illinois.
Please send me a copy of your Replacement Guide for Portable and Farm Radios.

NAME _____

ADDRESS _____

CITY _____ STATE _____

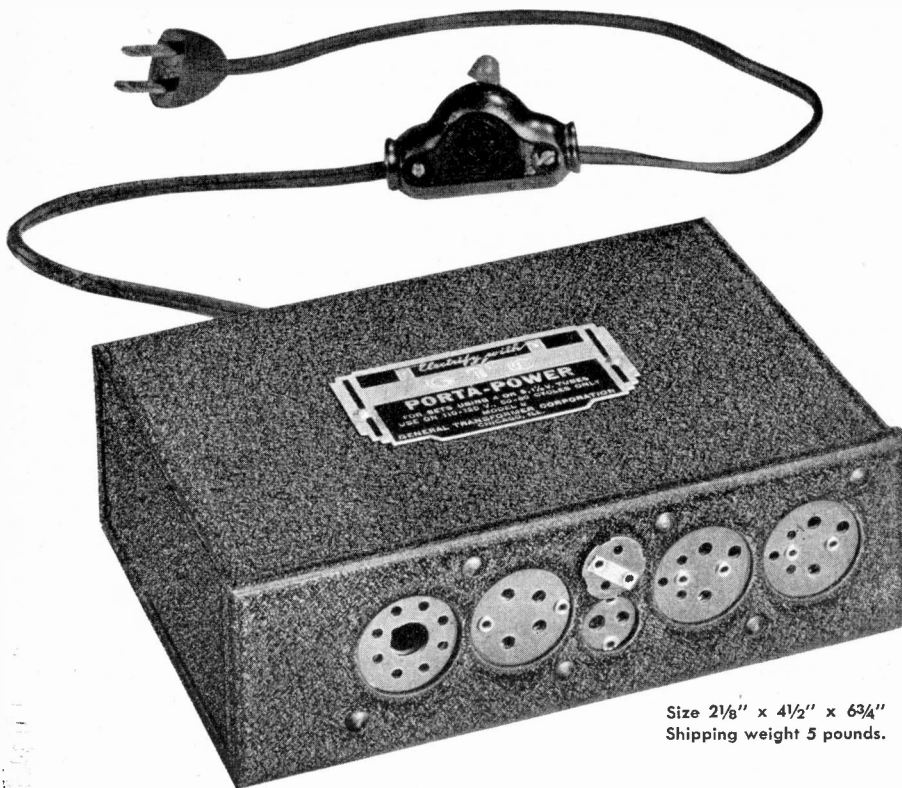
New!



Porta-Power MODEL "H"

featuring . . .

HUM - FREE OPERATION



Size 2 1/8" x 4 1/2" x 6 3/4"
Shipping weight 5 pounds.

PROVIDES

"A"

1.5v at 200 m.a.
1.35v at 250 m.a.
1.55v at 300 m.a.
1.35v at 350 m.a.

"B"

90v at 13 m.a.
101v at 8.5 m.a.

of 4, 5, or 6 tube, 1 1/2 volt battery farm or portable radios from 105-125 volt, 50-60 cycle lines.

Two section filter, composed of three very high capacity condensers, and two oversized iron core chokes in the "A" supply: — and two high capacity condensers and an oversized choke in the "B" supply positively block out hum.

Universal sockets for battery plugs.

Fits in 99% of all portables.

Circuit designed for optimum voltage regulation and changes in line volt-ages.

Weights 4 1/2 Pounds — and every ounce essential to topnotch performance.

O.P.A. APPROVED

PRICE
MODEL "H" \$15.00

Jobbers — write for details . . . Dealers — See your jobbers

GENERAL TRANSFORMER CORP. . .

1250 W. Van Buren St., Chicago 7, Ill.

NO BUBBLE!



NO TROUBLE!

Production vacuum checking of Marion Glass-to-Metal Hermetically Sealed Electrical Indicating Instruments is no haphazard operation . . . After sealing in our dehydrating rooms, the instruments are submerged in glass jars which are partially filled with alcohol. A vacuum of 25 inches is drawn in accordance with newest JAN-1-6 specifications. During the test we watch for air bubbles — no bubble means no trouble. Spot checks for a period of four hours are made in a 29 inch vacuum.

The testing apparatus, illustrated above, is a Marion development, and demonstrates our sincerity of purpose in producing hermetically sealed instruments. We take nothing for granted — we neither suppose nor assume. Because imperfectly sealed instruments entrap condensation, we make certain that every hermetic instrument bearing our name is — perfectly sealed.

Marion Glass-to-Metal Truly Hermetically Sealed 2½" and 3½" Electrical Indicating Instruments

It's good business to sign up for a Marion Franchise. For complete details, write to our Jobber Sales Division.



MARION ELECTRICAL INSTRUMENT CO.

MANCHESTER, NEW HAMPSHIRE

Jobber Sales Division: Electrical Instrument Distributing Co.
458 BROADWAY NEW YORK, N. Y.

PRECISION is a weapon in MT. CARMEL, ILL.

They use it effectively, too, these men and women who make up Meissner's *precision-el*, for many of them have sons, brothers and loved ones on the battle fronts. The photographs on this page show a few of these precisioneers who fight on the home front with precision and electronic skill as their weapons.



Precision is a family affair at Meissner. Here a letter from the front lines affects two families, and you can see that it's good news that will be reflected in the quality of their work when their rest period is over.



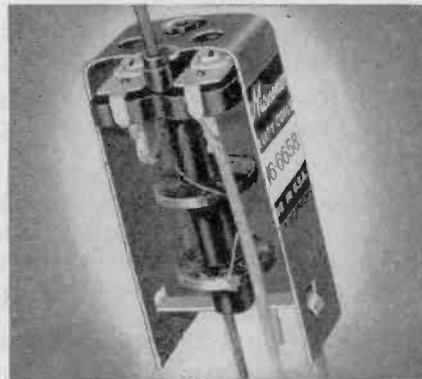
He's a veteran back from active service in the Pacific, but he's still fighting—this time on the home front with the men and women of Meissner. The traditions of precision quality he's learning here will be a weapon he can use after peace.



He splits thousandths of an inch as he does his war job. The "know how" that he and hundreds of Meissner *precision-el* have acquired is one more reason why you will be able to depend on Meissner quality after V-Day.



On the way to battle are these cartons of electronic war equipment. He sends them off with a smile, for he knows that the work of Meissner's *precision-el* will help bring his family together again soon.



"Step Up" Old Receivers!

These Meissner Ferrocart I. F. input and output transformers are getting top results in stepping up performance of old worn receivers. Special powdered iron core permits higher "Q" with a resultant increase in selectivity and gain, now available for frequency range 127-206. Ask for numbers 16-5728 input, 16-5730 output. List \$2.20 each.



MEISSNER

MANUFACTURING COMPANY • MT. CARMEL, ILL.

ADVANCED ELECTRONIC RESEARCH AND MANUFACTURE
Export Division: 25 Warren St., New York; Cable: Simonrice

In Trade

[from page 22]

electric food mixers, heating pads, hot plates, room heaters with the addition of an electric blanket. When new dies and tools are completed, many of these items will appear in a new dress with quality standards fully maintained.

Landers, Frary & Clark has been manufacturing electric irons and heating pads on a limited scale for several months, and it will shortly have avail-

able a travel iron, toaster, percolators, hot plates and other items. Both current production and new items when available will continue to be allocated to listed accounts through Universal's sales organization, and every effort

Zenith VP

Harry J. Wines has been elected vice president of Zenith Radionics

Corporation of New York, it was announced today by J. J. Nance, vice president of Zenith Radio Corporation, Chicago, of which the New York company is a wholly owned subsidiary. Wines has been general manager of the New York firm, which distributes Zenith products through the New York and New Jersey area, since its organization late in 1943.

First Radio Equipped Bus

The nation's first radio equipped bus is now in operation experimentally on lines of the Washington, Virginia and Maryland Coach Company, according to General Electric engineers who supplied the FM radio equipment being used.

Here are a few examples of how this kind of radio installation might benefit public and company alike. The bus operator will be able to report immediately any emergency confronting him, or the passengers of his bus, or the public at large along his route of travel. A tire picks up a nail or some glass and goes flat. Headquarters is notified immediately and a service car quickly dispatched to the scene, thus speeding up the repair and resumption of service. A shopper running to catch the bus suffers a heart attack which necessitates immediate medical attention, or the bus approaches the scene of a bad auto wreck. These cases would justify an immediate report to headquarters for help. A big fire, heavy congestion or other similar justified reasons for detouring traffic can be reported by headquarters to the bus driver and be guided along another route. A thief pulls a hold-up and grabs the bus cash box—if he can remove it—or some other unlawful act. The bus radio will assist in a more speedy apprehension of the criminal in such cases.

Experience with this kind of radio service between the Virginia bus headquarters at Arlington and supervisors' cars cruising company routes proves that faster communication through radio will "pay off," according to W. F. Kaylor, in charge of the company's supply services. Boiled down this means improved transportation, the major objective of the industry. The 250-watt General Electric FM transmitter installed in July by the company for its supply and allied services also will be used as the headquarters station for communications with the radio equipped bus.

Auto Radio Aerial

The 1946 line of aerials announced by the Radiart Corp., Cleveland, Ohio, is complete with all styles and lengths and with many features. The "De-



12 Models. ALL LENGTHS — ALL STYLES
PLEASURE AND POLICE TYPES



Get a copy of the new RADIART AERIAL CATALOG from your Distributor—available now.

Made from RADIART Quality materials throughout, these Aerials will meet every expectation for ease of installation—durable construction—perfect insulation and rustproof finish.

They are worthy of the name RADIART and are another example of why RADIART AERIALS HAVE ALWAYS BEEN THE STANDARD OF COMPARISON.

If you have not already done so, send your order to your Distributor for a stock of these new, glamorous RADIART AERIALS now.

Manufactured by the makers of RADIART Exact Duplicate Vibrators.

Radiart Corporation

3571 W. 62nd STREET • CLEVELAND 2, OHIO
Expert Division Canadian Office
25 Warren St., New York 7, N.Y. 455 Craik St., W., Montreal, Canada

Luxe CF" Model is typical. It is a complete assembly for installation on cowl or fender of any car. There are no attachments, extensions or extras to buy. Two short, one long and one wedge adapter insulators are included to fit curved or straight cowls and fenders. The 50" lead-in is ample for either installation. The aerial rod assembly has the top rod of stainless steel; tubular sections are of Antimonial Admiralty Brass.

Leads are the new Radiart "Plasti-Loom"—which is impervious to moisture, has high "Q" and minimum capacity to insure signal transfer efficiency. The inner conductor is covered by polyethelene tubing which is then tape wrapped and covered with a closely woven copper shield, and the whole loom is then coated with a heavy extrusion of abrasion-resistant vinylite. Mounting insulators are of Durez with bushing insulators of a plastic with very low-loss and high dielectric characteristics. Mountings are especially designed to prevent shorts to the car body, simplify installations and insure positive ground of lead shield. Other features are the "Static Muffler Ball", the phosphor bronze anti-rattler and the "single-pin" connector with bayonet adapter. Literature will be furnished by the manufacturer on request.

Stromberg-Carlson Promotes

James A. Frye, for sixteen years Detroit representative of the Stromberg-Carlson Company, was recently promoted to the post of manager of radio and appliance sales in the company's Chicago branch office. The company, at the Chicago branch office, distributes in addition to its own product Estate stoves, Blackstone washing machines, Procter appliances and the Schaefer "Pak-A-Way" home and farm freezers.

Electromaster thru Dealers

Details of the new distribution and sales program for Electromaster electric ranges and water heaters were announced by Gerald Hulett, Vice-President of the Company, at a recent meeting of district managers. This plan embraces a wide variety of wholesale and retail outlets, including appliance, hardware, furniture and department stores, as well as a select group of public utilities. This contrasts sharply with Electromaster's prewar merchandising program, which was directed exclusively through light and power companies.

The meeting, opened by Electromaster President R. B. Marshall, was attended by the individuals whose responsibility it will be to carry the

program into effect in their territories. These include: Leonard Leavis, who covers most of New England; H. K. Dewees, for the Southern cities between Atlanta and Miami; Earl Sigler, the Texas-Louisiana sales district; P. L. Miles, the Middlewest area; F. E. Drouillard, Detroit and Michigan; Albert M. Solen, Denver-to-Phoenix territory; Thomas Fielder, south Texas and part of Oklahoma; Alex Kuehlthau, the Northwest; Ben Sanderson, California; Edward Kramer, Iowa-Nebraska territory; and David Kirk, Missouri. Advertising and sales pro-

motions plans were outlined by Parker Holden, President of Holden, Clifford, Flint advertising agency, and Roy Blanchard, Electromaster Director of Advertising. R. Russell Brown, Director of Merchandising, presented the new products. Details on production were provided by Electromaster Vice-President H. H. Hubbard and E. J. Heinrich, Service Manager. E. R. Genthe, Secretary-Treasurer, discussed sales financing plans. A cooking demonstration by Electromaster home economist Ruth Graham concluded the program. [Continued on page 62]

HIGH QUALITY MATERIALS . . .

For the past six months Radiart Vibrators have been equal or superior to prewar vibrators in quality and performance.



Ask your jobber for a RADIART VIBRATOR Catalog —the most complete vibrator Guide on the market.

Physical Characteristics —

Wherever required, RADIART VIBRATORS are the same physical size as the original, thereby eliminating additional attachments for electrical grounding or for holding the vibrator in the socket.

Electrical Characteristics —

RADIART VIBRATORS are engineered to correctly match the individual requirements of each circuit application, taking into consideration every operating essential such as frequency, current carrying capacity, points and reeds properly tuned to match transformer-buffer circuit requirements.

This individual engineering guarantees much longer life than could possibly be obtained if any of these characteristics were compromised for the sake of vibrator type simplification.

RADIART VIBRATORS assure minimum R.F. interference, low level of mechanical noise and starting under adverse battery conditions.

Manufactured by makers of famous RADIART Rust Proof Aerials.



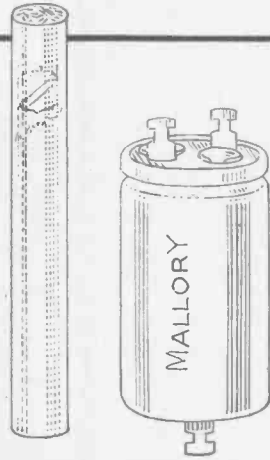
Radiart Corporation

3571 W. 62nd STREET • CLEVELAND 2, OHIO
Export Division 25 Warren St., New York 7, N.Y. Canadian Office 455 Craig St., W., Montreal, Canada



DUALS

with Lugs



They're GOOD and SMALL

Smaller than a cigarette—*smaller, in fact, than some of the smallest cardboard capacitors made!* But aluminum-cased, hermetically sealed! Long-lived, dependable! That's the story of the new Mallory Duals.

Notice those lugs at top and bottom! They eliminate broken leads, difficult skinning operations . . . make handy anchors for other wiring.

Notice especially the bottom capacitor in the upper left-hand picture. That's the Mallory "TCS," each section of which is independent of the other. It will replace units of common negative, common positive or separate section construction—yet it's the *smallest* separate section unit ever made!

These Mallory Dual Capacitors are part of a *complete new line*, including pint-sized single units too. Get acquainted with the entire family! See them—buy them at your nearest Mallory distributor.

P. R. MALLORY & CO., Inc.
INDIANAPOLIS 6, INDIANA



*More than ever—
ALWAYS
INSIST ON*

P. R. MALLORY & CO. Inc.
MALLORY
APPROVED
PRECISION PRODUCTS

VIBRATORS • VIBRAPACKS* • CONDENSERS
VOLUME CONTROLS • SWITCHES • RESISTORS
FILTERS • RECTIFIERS • POWER SUPPLIES

ALSO MALLORY "TROPICAL"™ DRY BATTERIES, ORIGINALLY DEVELOPED BY MALLORY FOR THE U. S. ARMY SIGNAL CORPS, NOT PRESENTLY AVAILABLE FOR CIVILIAN USE.

*Trademarks

Increase Factors for Radio Parts

PPRICE Administrator Chester Bowles has announced that ceiling prices for radio 'receiving tubes and parts sold for installation as original equipment in radio sets are being increased 5 to 11 percent.

The higher prices are provided through increase factors that tube and parts manufacturers may use in computing their ceiling prices under the OPA reconversion pricing program. This program provides for adjustment in ceiling prices for manufactured goods and products that have been out of production during the war. The increase factors for radio tubes and parts sold for use as original equipment in radio sets will be formalized shortly in pricing orders to be issued by OPA.

"The reconversion pricing factors will permit radio tube and parts manufacturers to determine quickly their new ceiling prices for post-war production, and, at the same time, permit manufacturers of completed domestic radio sets to calculate quickly what their costs will be for sets returning to market," Mr. Bowles said.

He emphasized that the increase factors are for use only in computing ceilings for radio tubes and parts sold for use as original equipment in the manufacture of radio sets. *Radio tubes and parts for replacement in the repair of sets are not affected by the action*

and continue to be the highest prices sellers charged during March 1942.

Interim Prices, Except for Tubes

"We were required to do a fast job in setting these increase factors because we did not want price to be an impediment in the quick return of radio set production," Mr. Bowles declared. "Right up to the time of the Jap surrender the radio tube and parts industries were 100 percent engaged in war production. The end of the war, as you know, came very suddenly, and up to that time few manufacturers had supplied us with cost data."

"Full and complete financial data were quickly supplied by the radio tube industry when OPA requested cost data for use in determining reconversion price increase factors. The increase factor we are providing for original equipment radio receiving tubes is 10.4 percent, and was calculated on the basis of cost figures submitted by more than 86 percent of the radio tube industry. In other words, original equipment tube reconversion ceiling prices are the individual manufacturer's October 1-15, 1941 ceiling prices plus 10.4 percent.

"Less complete financial data, however, were supplied by manufacturers of parts other than tubes when requested by OPA. As a result, we are

being forced to provide factors for parts other than tubes that are 'interim' increase factors. If for any items, they should prove too low, we will be ready to adjust the parts increase factors upward later. However, we will adjust them upward only if additional cost data are supplied us by parts manufacturers, and such cost data demonstrate a need for higher prices."

The increase factors for original equipment radio tubes and parts are as follows:

Radio receiving set tubes	10.4 percent
Coils for radio equipment	11 "
Radio transformers and chokes	11 "
Variable capacitors	9 "
Speakers and speaker parts	9 "
Fixed capacitors	7 "
Parts for electric phonographs and radio phonograph combinations	7 "
Resistors, all types	5 "
All other radio parts, as covered by Maximum Price Regulation 136 — Machines, Parts and Machinery Services and not explicitly covered above	5 "

To calculate his ceiling price for a radio tube or part sold for use as original equipment in a radio set, the manufacturer takes his October 1-15, 1941, price for the part and multiplies it by the increase factor. The sum of the resulting figure and the October 1-15, 1941, price is the manufacturer's reconversion ceiling price.

Radio Industry Protests OPA "Increase Factors"

RECONVERSION of the radio industry to civilian production is stalled, with wide unemployment, because of the OPA pricing policy, with a delay of several weeks, at least, in prospect. Tube, parts and cabinet manufacturers generally are refusing orders from set manufacturers, and the industry is unable to proceed with civilian production and em-


ployment because of the OPA pricing policy, based on Oct. 1941 levels, which precludes recovery of all actual production costs.

Early in September the industry appealed to Congress for relief, after industry leaders had held a series of conferences with OPA officials. RMA, through president R. C. Cosgrove and executive vice president Bond Geddes,

detailed the industry's general suspension of civilian radio production to Senator Mead, of New York, Chairman of the Special Senate War and Reconversion Investigating Committee (formerly the "Truman Committee"). Senator Mead promised immediate action with OPA and also a committee investigation, preliminary to formal

[Continued on page 78]

. SYLVANIA RADIO TUBE


 (Serviceman's Imprint)
 No.
Date.

CUSTOMER

Name

Street

City

Tubes Needed

Tubes Sold

Delivery Date

Customer's Signature

(DEALER'S COPY) Salesman

(CUSTOMER'S COPY) Salesman

(CHECKER'S COPY)

ABOVE AND ACROSS: Suggested form (both sides of same card) for use of servicemen on call or in shop. Front (above) lists job data; back (across) identifies owner's set and appliance wants.

previous telephone and direct-mail sales-promotion effort.

The Inside Track

In the home you find radios that need servicing; you can always talk with people who plan to buy new sets; you can probe your household appliance market; and you can make direct sales of accessory products. Through personal selling you can step up each sale and easily turn your contact time into increased profits.

Four basic points to the radio service-man's merchandising program should therefore include the following:

1. The sale of service to recondition worn sets, including full complements of replacement tubes.
2. The sale of minor appliance service and incidental household items.
3. Establish himself in the mind of the customer as a source for future service when needed.
4. The promotion of leads for the sale of new radios and new household appliances.

Use Home Contacts To INCREASE SALES

Apply personal selling in the home to merchandise group tube replacements, additional service and new radios and appliances

by **BOB ALMY,**

Manager Distributor Sales, Sylvania Electric Products, Inc.

DURING the prewar period many radio service-dealers overlooked opportunities to increase sales and profits through customer contacts in the home. They failed to evaluate these customer contacts as natural starting points for more business. Increased demand for service and greatly increased competition during the postwar will make sound sales promotion effort during home contacts increasingly important. This will be particularly true when FM and television enjoy widespread acceptance. Today radio service-deal-

ers should seize every opportunity to develop effective merchandising plans for the future. By learning how to get their full share of existing business *now*, they can prepare themselves for the greater sales and profit opportunities to come.

To present radio servicing can be added sales of minor service for household appliances—good preparation for the sale of new radios and new appliances. This cannot be done effectively without contacts with customers and prospects, preferably personal contacts in the customer's home to follow-up

Wartime scarcities of tubes have silenced many home receivers and have created a large market for group tube replacements in sets still operative. The logical starting point for postwar merchandising plans is increased selling of services, especially tubes as soon as they are available. The easiest way to up tube sales, is to *push* complete replacements by demonstrating the difference to the radio listener on his set in his home.

This first step should stimulate an association of merchandising ideas extending to household appliances also in disrepair due to wartime scarcities. For example: line cords and plugs on vacuum cleaners, washers, ironers, toasters, mixers, irons and many other portable household appliances may need replacement. Where universal motors are used you can replace worn brushes profitably. National surveys of home lighting indicate that many lamp sockets are *always* empty simply because people don't bother to replace



Trained personnel sell records from displays, know where to get "specials".

Six Sales Floors

Radio department ties in with local real estate agencies to promote sale of home inter-com systems; record displays build customer traffic, "feed" direct mail lists. Offers speech recording service.



CLARK MUSIC COMPANY of Syracuse, New York might well be termed a veritable radio and record merchandising "department store." Within its six display floors are a radio selling display lounge, a record selling section, a recording center and a radio service unit. Clark's merchandising activities for each of its departments are with minor modifications adaptable to use by retailers in communities large and small throughout the country.

Members of the record selling staff have received an intensive two weeks course of training which covers names of recording personalities, data on classical composers, information regarding foreign and "rare" recordings in the department, etc.

The dealer's method of securing an authentic mailing list for its direct mailing activities is simplicity itself. On every sales slip even if for only one

waxing is placed the purchaser's name and address—and at the bottom the type of music he or she is most interested in and any particular recorded selection currently out of stock which is desired. Sales slips are examined semi-weekly and the data gleaned incorporated in Clarks' own "record consumer file".

In-store record displays are used effectively to encourage customer traffic. At present the "display of the month" consists of a group of early American phonographs of the cylinder type together with "first recordings" made of important statesmen's voices. This is open to youngsters.

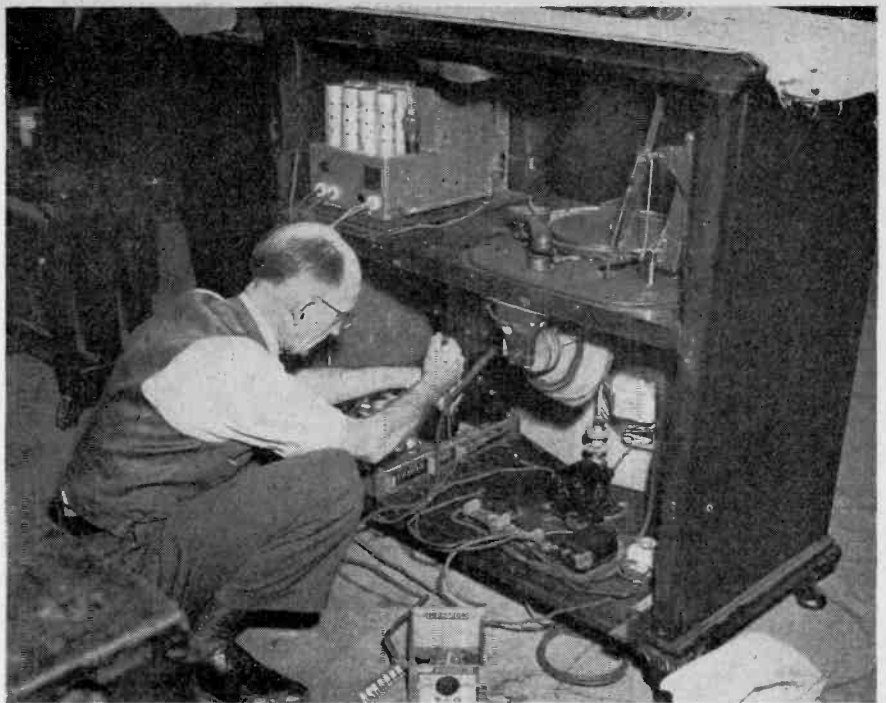
From the foregoing it is plain that dull moments in the "record merchandising calendar are indeed few and far between. Clarks' recording chambers with their associated business-getting promotions is the next item on the Clarks agenda to consider. Clarks has

one of its representatives pay a personal visit on every music instructor in the city. The instructors are urged to have their pupils "record" at Clarks so that a "playback" for the parents may be possible as proof positive of the pupil's musical progress.

Worthy of mention is the service to "speechmakers". Lawyers, college students, key officials in politics and members of fraternal organizations who feel a speech coming on are invited to record it in advance at the Clarks' recording studio and then upon playing it back make whatever changes seem desirable in the interests of listener efficiency.

The radio selling lounge is presided over by Charles W. Richardson, for over 20 years associated with the company. This division has not allowed "grass to grow under its feet". Tying up with a number of local real estate agencies, Clarks agree to furnish a complete home radio-electronic system comprising a radio phonograph master receiver for the parlor, several secondary radios for the bedrooms, a kitchen radio and a home inter-communication system as well as an electronic burglar alarm—all in one complete package. The dealer and the real estate agencies co-sponsor newspaper advertising outlining choice homes and home sites with a footnote at the bottom devoted to the Clark home sound equipment service. With the accent on homebuilding this dealer has not overlooked the returning war veteran.

The trade-in problem does not perplex Clarks. They are suggesting in their radio and newspaper advertising that community residents trade in their old sets now as soon as replacement models are available. Clarks will accept trade-ins only on purchases of new combination receivers with a retail



Service specialists repair and recondition complex radio combinations, for customers or for resale. Billings include pickup and delivery service. Installations of home inter-communication systems help build list of "qualified" leads for later purchases of radio-phonos, individual room receivers.

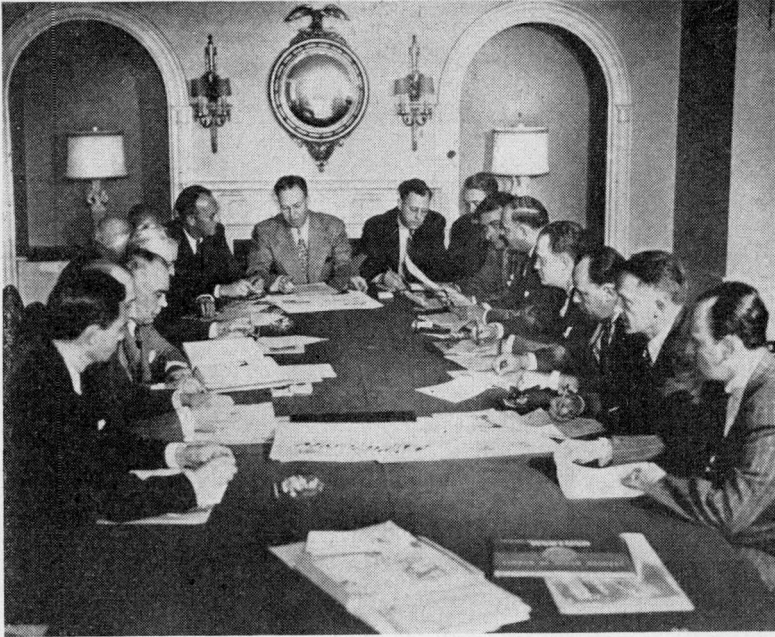
value of \$150.00 or over. Concurrently these second hand receivers purchased are being reconditioned and a campaign will get under way shortly to purchase a "Clark reconditioned radio" for a birthday gift to a child in the family. Many youngsters wish a radio in their very own room—it need not be an f.m-television special—any radio will do if it plays adequately and is capable of picking up "jam sessions aplenty!" Clarks are of the opinion that trade-ins may be sold to tourist and guest homes whose slogan is "a radio in every room" but whose budget is not geared to the purchase

of a group of post-war radio receivers.

Our "Cooks Tour" of the establishment may well be climaxed by a visit to the service department proper. This concern is anxious to build up its service unit because it regards every service customer as a possible radio purchaser at some future date. The service department does not repair radios in the home. It will furnish pickup and delivery service gladly. And with every service invoice goes a printed form advising the service patron exactly how much Clarks will allow on the receiver as a trade-in against a future purchase.

Below, left: One of upper floors houses recording studio, for individual singers; for voice, pace and content checkups on speeches about to be made by local politicians, lawyers, fraternity members, students. Right: Merchandising and record promotions pushed with monthly displays. Shown, exhibit of early American phonographs and cylinder recordings of prominent old-timers; open to youngsters and their parents.





PROFITS IN BUSINESS DETAIL AND CONTROL

Universal's Systemeering is designed to handle the vitally important subject of retail operation and do it in a way that should lay low for all time the bug-a-boo of business detail and control, lack of which causes many dealers to trickle away the dollars that spell the difference between Surplus and Deficit—in the black or in the red.

Like "Moderneering" before it (see RSD, July, 1945, page 24) Systemeering is the next important step in Universal's "U" Plan—which is open to all dealers whose faith in the future and whose ambition leads them to inquire how their own radio and appliance business can be made the more profitable through this research into modern merchandising patterns and widespread dissemination of its findings.

Photo above, l. to r.: Plan Board of experts for Universal's new "Systemeering" program. Gilbert Goold, Wortman, Barton & Goold; Wm. Allan, Moore Business Forms, Inc.; R. A. Buchez, Burroughs Adding Machine Co.; Evans A. McKay, Moore Business Forms Inc.; F. J. Sparks, F. P. Townsend, Shaw-Walker Co.; R. D. Hopkin, Moore Business Forms; Dr. O. P. Robinson, New York University; Rowland Baird, Landers, Frary & Clark; A. L. Papworth, Moore Business Forms; W. J. Cashman, director of promotion and publicity, Landers, Frary & Clark; W. H. Hansen, of same firm; H. F. Pursell, G. E. Bower, Moore Business Forms; W. C. Sproule, Burroughs Adding Machine Co.; William Hines, Wortman, Barton & Goold.

his size, he can base his selling operations on more complete records and can employ systems and methods which might prove too complicated and expensive for the small store.

The larger stores' selling activities consist of:

1. *Advertising and display*
2. *"Over-the-Counter" or personal salesmanship*
3. *Telephone and mail order sales*

and in some stores

4. *Home demonstration selling*
5. *Service Department selling*

Any procedures, systems, or plans set up to stimulate, handle, or record these selling activities are considered in larger stores, as a part of the selling job. The plans and procedures described here are some of the basic ones which help to make the larger store selling job effective.

SALES RECORDS

In many types of stores the prospect file is the record which initiates the selling process. Although a prospect record can be used advantageously in any store, it is particularly essential for the sale of higher price line items or for items which benefit from home demonstration or direct-by-mail salesmanship.

Prospect Record

A record of all known prospects is necessary for the intelligent direction of sales effort. The form is designed for use where outside salesmen are employed. Prospect records are made out by the salesmen on his first call and the results of all subsequent calls are added. By filing one copy alphabetically by territory and one copy by follow-up date, close attention is given to every prospect. The names and addresses on this file furnish a selected mailing list for adver-

PLAN YOUR SELLING

I. THE LARGER STORE OPERATION

SELLING is the most important function in any retail store. Whether he operates a large or a small business, the alert retail merchant gears every operating procedure so that it helps to increase sales and makes the selling process easier and more efficient.

The small retailer, in his selling job, enjoys the advantage of personal customer contact and first-hand knowledge of his customers' needs. The larger retailer may lose this advantage, but he gains in his ability to use the scientific approach—to plan and control his selling activities. Due to

tising and promotion purposes.

Copy #1—Sales manager's copy—filed alphabetically by prospect's name.

Copy #2—Salesman's copy—filed by follow-up date.

The Sales Check System

As with the small store, the sales check is the basis of all sales records and is a vital part of any larger store's selling process. It serves as a posting medium for charge transac-

tions, provides the necessary information to compile departmental and individual sales records, provides a record of the money involved in the transaction, indicates how the merchandise is to be handled (C.O.D.) packaging, (delivery) provides the customer with a receipt and statement of her purchase, and gives the information for the accounting departments' record of the sale.

In most larger stores, the sales-check system should be designed to record any of the following types of transactions:

1. Customer pays for the transaction and takes it with her.
2. Purchase is paid for and sent to customer's home.
3. Merchandise is charged and taken by customer.
4. Merchandise is charged and delivered to customer's home.
5. Merchandise is charged to one name and sent to another.
6. Part payments.
7. C.O.D. transactions should be adequate to record exchanges, refunds, and other special transactions.

SALESBOOK SYSTEMS

Simplification and standardization of retail store salesbooks has long been a subject of discussion among retail executives. The two methods, due to their simplicity of design and operation, will reduce errors and increase efficiency in your store. For stores having less than 15% of their deliveries made C.O.D., the One Book System is sufficient and its use is advised.

Paid and Charge Sales One Book System:

Copy #1—office copy—to cashier on paid sales. To Accounting department for regular posting on charge sales.

Copy #2A—Customer's receipt.

Copy #2B—Audit Bag copy—turned in to Audit department at close of business.

Copies #3 and #4—merchandise and delivery copy—to packer with merchandise.

Part #4A—is the packer's voucher.

Parts #3 and 4C—if merchandise is to be delivered these parts are pasted to the package and sent to the delivery department. Part #3 is detached in the delivery room and filed for tracing purposes. In the case of "take with" sales, parts #3 and 4C are discarded.

C.O.D. Sales

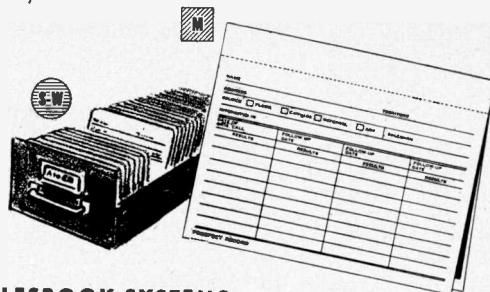
Copies #1, #3 and #4 are sent

PROSPECT RECORD

A record of all known prospects is necessary for the intelligent direction of sales effort. Prospect Records are made out by the salesman or service man on his first call and the results of all subsequent calls are added. By filing one copy alphabetically by territory and with flag signal close attention is given to every prospect. The names and addresses on this file furnish a selected mailing list for advertising purposes.

COPY 1—Sales Manager's Copy
Filed by territory and then alphabetically by prospect's name.

COPY 2—Salesman's Copy
Filed by follow-up-date.



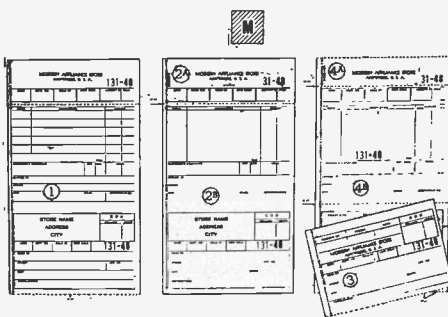
SALESBOOK SYSTEMS

Simplification and standardization of retail store salesbooks has long been a subject of discussion among retail executives. The two methods and books illustrated, due to their simplicity of design and operation,

will reduce errors and increase efficiency in your store. For stores having less than 15% of their deliveries made C.O.D., the One Book System is sufficient and its use is advised.

A ONE BOOK SYSTEM

Procedure for Paid and Charge Sales



COPY 1
Office Copy
To cash or paid sales. To Accounting department for regular posting on charge sales.

COPY 2A
Customer's Receipt

COPY 2B
Audit Copy
Turned into Audit department at close of business.

COPIES 3 and 4
Merchandise and Delivery Copy
To packer with merchandise.

PART 4A—is the packer's voucher.

PARTS 3 and 4C—if merchandise is to be delivered these parts are pasted to the package and sent to the delivery department. Part 3 is detached in the delivery room and filed for tracing purposes. In the case of "take with" sales, parts 3 and 4C are discarded.

PROCEDURE FOR C.O.D. SALES

COPIES 1, 3 and 4 are sent with merchandise to the packer.

COPY 2—Audit Copy—sent to Audit department at close of business. PART 4A is detached and held by packer as his voucher.

COPY 1 and part 4B with part 3 attached are inverted by folding at bottom. Copy 1 is pasted to a C.O.D. tag and package is sent to the delivery department. Part 3 is removed and filed in the delivery room and used as a tracer.

PART 4B and 4C are removed and sent to the Audit department for establishing C.O.D. controls.

with merchandise to the packer.

Copy #2—Audit Bag copy—sent to Audit department at close of business.

Part A is detached and held by packer as his voucher.

Copy #1 and part #4B with part #3 attached are inverted by folding at bottom. Copy #1 is pasted to a C.O.D. tag and package is sent to the delivery department. Part #3 is removed and filed in the delivery room and used as a tracer.

Part #4B and #4C are removed and sent to the Audit department for establishing C.O.D. controls.

Two Book System

Procedure for paid and charge sales same as in One Book System.

C.O.D. Sales

Copies #1 and #3 sent with merchandise to packer.

Copy #2—Audit Bag Copy—sent to Audit department at close of business.

Part #3A—is detached by packer as his voucher.

Copy #3—is pasted to a C.O.D. tag with copy #1 attached. Package is sent to the delivery department. Copy #1 is detached and receipted by the delivery department and forwarded to the Audit department where C.O.D. control is established. Copy #3 is attached to the package for delivery.

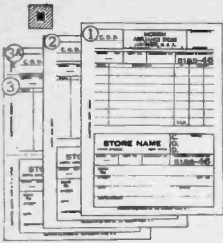
REGISTERING AND RECORDING SALES

Cash Registers

Cash registers are, of course, an essential part of every larger store's sales recording equipment. They provide an indispensable control and protection of cash.

A sales ticket should be prepared for each cash or charge sale. This provides the store with an original document if later, in case of a customer complaint, it is necessary to refer to it. By registering all sales and validating each sales ticket, the totals of the day's transactions are in the cash register or cash machine so that the locked-in detail tape contains a complete record. If the dealer desires to issue a receipt to the customer, one of several plans can be installed to provide the kind of receipt desired along with, or instead of, validating the ticket.

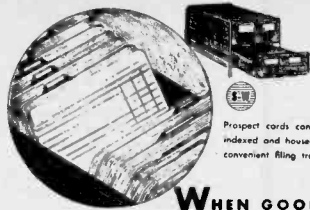
After totals are taken at the end of the day and cash is balanced, sales tickets are of course audited on either a calculator or adding-listing machine. They are also recorded in their proper classifications—Cash Sales and Charge Sales—on the Daily Transaction Report, using adding or book-keeping equipment as mentioned before.



A TWO-BOOK SYSTEM

Procedure for Paid and Charge Sales Same as in One Book

PROCEDURE FOR C. O. D. SALES
 COPIES 1 and 3 sent with merchandise to packer.
 COPY 2 — Audit Copy — sent to Audit department at close of business.
 PART 3A — is detached by packer as his voucher.
 COPY 3 — is posted to a C.O.D. tag with copy 1 attached. Package is sent to the delivery department. Copy 1 is detached and receipted by the delivery department and forwarded to the Audit department where C.O.D. control is established. Copy 3 is attached to the package for delivery.



PROSPECT RECORDS

This is the "heart" of your promotional effort. It can be so designed that it not only acts as your mailing list but also tells you what merchandise your customers already own and whether they are yours or a competitor's when serviced last, store of repair, and the like. Such information is invaluable in telephone solicitation.

Prospect cards can be indexed and housed in convenient filing trays.

WHEN GOODS MOVE OFF YOUR SHELVES . . .

Into the hands of customers, a change is again made in your business picture. And since you have probably set a sales quota, or a mark to shoot at, you want to know how close you are coming to hitting that mark each day. Therefore, whether the sale is cash or charge, you will want to keep a permanent record of it. A sales check gives you that record and is the medium from which to record all sales on your daily transaction report and later post in total on the management control ledgers to keep your business picture constantly in balance and up-to-date.

REGISTERING AND RECORDING SALES

Cash registers are, of course, an essential part of every larger store's sales recording equipment. They provide an indispensable control and protection of cash.

A sales check should be prepared for each cash or charge sale. This provides the store with an original document if later, in case of a customer complaint or for any other reason it is necessary to refer to it.

After totals are taken at the end of the day and cash is balanced, sales checks are audited on either a calculator or adding-listing machine. They are also recorded in their proper classification — Cash Sales and Charge Sales — on the Daily Transaction Report, using adding or bookkeeping equipment as mentioned before.

An analysis of sales may be made by clerks or departments. Again, as in the case of analysis of purchases, this analysis may be made on adding machines, bookkeeping machines or calculators.

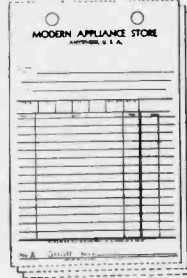


The record of the day's transactions are in the cash register or cash machines — that the locked-in detail have complete a complete record.



Combination cash register-adding machine. Has, in one of many types for registering, receiving and certifying sales, with large receipt capacity and numerous adding machine uses.

Printing and certifying cash register register cash and charge sales, with or without printed receipt to customer.



SALES CHECK

The sales check provides the small store with a permanent record of cash, charge or C.O.D. sales, payments on account, and any merchandise returned by customers. ORIGINAL . . . is your office record and is filed by date after posting to the Day Book (Daily Transaction) and Inventory records. DUPLICATE . . . is given to the customer as a copy of the transaction. TRIPLICATE . . . is the audit copy left in the book or register for reference and checking by numerical sequence.

CHARGE SALES

In many types of stores, the granting of credit privileges to customers proves to be an important sales builder, when care is exercised in the extension of credit, the records kept, and how the service is controlled. If you are doing a credit business, you will need a simple system of recording charge sales, of keeping a daily summary, and of making the proper ledger entries for collections and control. (Refer also to THE SELLING FUNCTION.)

An analysis of sales may be made by clerks or departments. Again, as in the case of analysis of purchases, this analysis may be made on adding machines, bookkeeping machines or calculators.

Cost of sales may be obtained in several different ways:

- (1) listed from sales tickets;
- (2) determined with a retail inventory system—common in department stores—in which a percentage is used based on relationship between cost and selling price of purchases; or
- (3) determined by a percentage based on past experience. Ledgers showing sales by lines or clerks, or cost of sales by lines, can of course be posted with whichever type of ledger posting equipment you use.

While the above covers the general plan and possibilities the advantage of different plans and methods can be ascertained from technical installation and methods men experienced in retail sales accounting.

Charge Sales

A salescheck must be made out for each charge transaction whether the merchandise is taken or sent. Charge transactions must be recorded so that they can be readily authorized and can be posted to the customer's account.

Posting Charges

Charges to customers must of course be posted to the Customers Account and a bill or statement rendered to him. Since the work must be done, the easiest, simplest and fastest way to meet your individual needs should be selected.

In all cases, a Sales Ticket or Cash Received on Account Ticket is used as media from which to post the day's active accounts. Any of these methods will keep your accounts receivable in continued balance and reduce or eliminate trial balance and other month-end packload work.

Recording and Posting Collections

When a collection is made, or a customer pays on his account, a cash ticket showing the name and amount to be credited should be made. Likewise, tickets should be made for any "other cash received" to insure proper posting. A Cash Received Journal can, of course, be used instead of tickets.

All checks and cash received for the day (including the cash sales total) should be deposited in the bank. Cash received should also be listed under the headings "Cash Received on Account" and "Other Cash Received" on the Daily Transaction Report using machines for speed and accuracy as explained before.

Collections on account are also posted to customer's record, using the desk model posting machine, the high-speed automatic machine or the typewriter accounting machine. If the latter equipment is used for your posting, you will note that it will not only post the ledger and statement but also write a Cash Received Journal in the same operation.

At this point, it should be mentioned that Cash Paid Out should be handled through a petty cash fund. This fund is a fixed amount which in itself should always be in balance either with

the cash or receipts for cash. Periodically the receipts are recapped and a check written for cash reimbursing the fund to the original amount. The check is posted of course as previously explained under paying.

Again, it will be seen that recording and posting collections can be handled in a variety of different ways depending upon the needs and volume of the individual store.

LAY-AWAY OR "WILL CALL" SALES

Lay-away or "will call" purchases are becoming increasingly popular with customers. They offer the advantage of time payments without the burden of interest rates or carrying charges. Stores that promote this type of business aggressively are enjoying important increases in sales and profits.

The system used in the store for handling and recording lay-away sales is, of course, important in the promotion of this business. An efficient system improves the store's service and builds customer satisfaction.

Lay-Away or "Will Call" Sales System

The three part form used in the lay-away sale is prepared by the salesman in the same way as an ordinary sales check. The form serves as sales ticket, receipt, ledger card, and merchandise check.

Original copy—merchandise check and customer's record. After preparation by salesmen this copy is torn at perforation, bottom portion given to

customer as receipt and for presentation with latter payments. Balance of copy #1 is tagged to merchandise.

Duplicate copy—statement copy and *Triplicate copy*—ledger card—are left attached, with carbon interleaved. Filed alphabetically by customer's name and used for recording all subsequent payments. If payments are not kept up or merchandise is not called for, Copy #2 is sent to the customer as statement of past due account. Copy #3 remains in file as ledger card until transaction is closed.

TELEPHONE AND MAIL ORDER SALES

Telephone and mail order business is another phase of the store's selling job which, with aggressive promotion, holds real opportunity for increased sales and profits. With the growing decentralization of the population, larger store particularly, must make shopping convenient for customers living at a distance from the store. An efficient mail and telephone ordering system will do much to increase the store's service and sales. The system described here is simple and practical.

Telephone Sales Order

Retail stores who advertise telephone order service and then set up an efficient system to take care of this business are far ahead of competition.

The method and form illustrated is one that is used successfully in many large stores. This five part, continuous strip, sales check is designed for both C.O.D. and charge sales. On each telephone sale the telephone order clerk fills out the first set of sales checks with name, address, type of sale, department number and merchandise. If additional merchandise from other departments is sold, successive sales checks are used. Only the department number and the merchandise is entered by the telephone clerk on these additional checks. This procedure saves the great deal of time it would take to repeat entire sales checks for each item and so the customer receives prompt and efficient service.

When each telephone sale is completed, the group of checks representing that particular order are torn from the strip in one lot. Balance of the incompleting checks are filled in by the telephone clerk when she is free or by additional personnel.

Individual sales checks are sorted by departments and forwarded to them for filling. Carbons remain stapled in each set so that they can be completed conveniently.

Copy #1—Original office copy.

Copy #2—Address label and cus-

tomers' check.

Copy #3—Delivery check and wrapper's stub.

Copy #4—Telephone order department copy.

Copy #5—Audit copy.

Mail Sales Order

For best control purposes all mail orders should come in to one central point. If this particular type of sales volume is heavy, the use of continuous strip sales checks for typing is advised. Otherwise regular handwritten book or register type forms will suffice.

In the case of paid transactions, these four part checks are filled out with name and address of the customer and the department number. The amount received is also entered on the extreme bottom of the form for checking purposes only.

Copies #1, #2, and #3 are attached to the customer's letter and sent to the proper selling department where the order is filled and the sales information completed.

Copy #1—upper part (address label) is sent with merchandise to packer who pastes it on package.

Copy #1—lower part (mail order file copy) is returned to Mail Order department for checking amount of sale against money received. It is then forwarded to the Audit department for cash control purposes.

Copy #2—(delivery voucher and customer's check) is sent with merchandise to the packer.

Copy #2—upper part (delivery voucher) is attached to outside of

package by the packer.

Copy #2—lower part (customer's check) is placed with merchandise inside package.

Merchandise is forwarded to the delivery department. Copy #2—upper part is removed and stamped with date and delivery number. Filed in the Bureau of Adjustments by date.

Copy #3 is placed in the tally envelope by the sales clerk in the selling department.

Copy #4 is retained in the Mail Order department for checking against copy #1 lower part. It is then filed numerically.

If a credit balance exists, the mail order cashier prepares a refund and attaches to copy #1 of the mail order sales check. These copies are then forwarded to the Audit department with the cashier's report.

If the cash received is insufficient to cover the sales transaction, the balance becomes a C.O.D. item. The amount is entered on the Mail Order department check by the sales clerk and the regular C.O.D. procedure is followed.

Copy #1 is the C.O.D. Tag copy.

Copy #2 is returned to the Mail Order department, checked against copy #4 and forwarded with the cashier's report to the Audit department.

Copy #3 Tally bag copy.

Copy #4—retained in Mail Order department—filed numerically.

In the case of full C.O.D. or charge sales, this sales check is not used and the customer's letter or order is forwarded direct to the selling department for filling on a sales check.

RADIO SETS ESSENTIAL

THE business of selling a radio set to the customer today is an entirely different proposition from what it was in the early days of radio, and, to some extent, even to the days before the war, according to Nate Hast, Merchandise Manager in charge of the Lear Home Radio Division.

"Before the war," Mr. Hast says, "selling a radio was pretty much a job of convincing the buyer that he needed a set to add to the beauty of his living room; or he needed that extra table model because his neighbor, Jones, had two radio sets in the house. It was a luxury item then. Today, however, radio has proven itself to be an essential part of the household; just as important as the refrigerator, or the telephone, or the electric light. Without a radio, the average family today would be at a loss for quick news, for entertainment, and for a general center of family life."

The radio has become a definite part of our daily life. Families gauge their living habits by it. Father gets up, shaves while he listens to a certain show; has breakfast with one ear tuned to the news broadcast, and plans his evening cigar for another news broadcast, or a favorite show of his. Mother's household tasks are done accompanied by her favorite schedules; and even Junior's prompt arrival for dinner, or home work, is timed to some favorite program of his.

This tremendous hold that radio has on the American public will make radio selling a bit easier, Mr. Hast believes, but only on the surface. People will be looking for better, more dependable radios. Now that it is not just a luxury, but a real necessity in our lives, radios will have to stand up under the competition that such goods meet, and the higher standards which are expected of them.

Pointers On G. I. BUSINESS LOANS

A GREAT American humorist of another day once said that the trouble with people was not that they knew too much, but that they knew too much that was not so! Had he been alive today and writing about the so-called G. I. Bill of Rights he hardly could have made a more apt observation.

Even before President Roosevelt signed the bill making the Servicemen's Readjustment Act (Public Law 346, 78th Congress) the law of the land, well-intentioned but ill-informed writers rushed into print with glowing pictures of a veritable utopia for the returning battle-weary veterans. Such articles have contributed considerably more heat than light upon a subject which, at best, is difficult to understand. Already, too many business men and veterans and wives and relatives of men and women still in service have been led to believe that the Act implicitly and solemnly gives every returning serviceman a stake with which to start any conceivable business venture of his choice.

In city after city, incidents have been reported in which sadly disillusioned veterans have made demands for \$2,000 with which to start businesses. They wearily quote garbled curbstone versions of the Act as evidence of their right to such funds.

"It is surprising how many veterans believe that the federal government has promised to lend each man \$2,000," lamented the vice president of a large western banking institution.

This bank, incidentally, has approved only two G.I. loans to veterans for business purposes, so far, and these await veterans administration approval. In the city of Los Angeles there are already some 65,000 World War II veterans. Army surveys show between seven and eleven percent of all servicemen desire to start a business. This would indicate at least 4,500 such potential businessmen-veterans in one city, alone. Yet, as this is written, exactly one G. I. business loan has been completed in Los Angeles.

Government will pay the first year's interest on that part of the loan which it guarantees.

by **HAROLD J. ASHE**

Misconceptions

This picture is not as bad as it seems, however. Initial difficulties are traceable to misconceptions regarding the G. I. Bill of Rights. These should be cleared up first before attempting to show precisely what the loan features are and how to get such financing.

Firstly: Probably the most widely held misconception about the Act not only among veterans, but civilians generally, is that the loan feature is a sort of bonus or adjusted service pay decked out in new legal garb. Neither Congress nor veterans' organizations held any such belief in passing

or supporting the Serviceman's Readjustment Act of 1944, and the latter specifically have reserved the right to press for a bonus or adjusted service pay at a later date.

Secondly: The government is not advancing any government funds for the establishment of veterans' businesses, as such. This should dispel the notion that the government has \$2,000 earmarked for each veteran after he has been mustered out of service.

Thirdly: While commonly called a Bill of Rights, the Servicemen's Readjustment Act in its loan features in particular (home, farm or business), might more properly be styled a G. I.

VETERAN RE-EMPLOYMENT

A special committee has been formed at Electronic Laboratories, Indianapolis, Indiana to assist servicemen, returning to the company, in such matters as housing, special legal problems and other readjustment matters. It will be known as the Veteran's Committee. Members are: Paul W. Briney, personnel director, W. P. Hahn, legal counsel, Grover Schaub, and Hal Talin.

While a Selective Service Act guarantees rights to servicemen with regard to reemployment, Electronic Laboratories feels that such additional assistance as could be provided returned servicemen by a committee is a moral responsibility of the company. In determining the placement in the company of a returning veteran, careful consideration will be given to his employment history, military his-

tory, his physical condition, and his own interests.

Where a veteran has a particular record of achievement in service, has broadened his outlook and strengthened his character, or has acquired specialized training — any or all of which may have increased his capacity for usefulness over what it was prior to entering the service — special consideration will be given towards placement in a better job than when he left for the service.

Also, every effort will be made to provide useful jobs for physically handicapped veterans, where they can perform more satisfactorily. The whole effort will be to give the returning veteran every possible opportunity and to help him to return to normal life as easily and quickly as possible.

Bill of *Qualified Rights*. That is to say, the veteran has a right to a loan only provided he is able to qualify by meeting the conditions prescribed by statute.

So let's take up step by step the question of business loans—who may get them, and how!

Who Is Eligible

An eligible veteran is one who (a) served in the active military or naval service of the United States on or after September 16, 1940, and prior to termination of the present war; and (b) has been discharged or released under conditions other than dishonorable after active service of 90 days or more, or because of injury or disability incurred in line of duty, even though less than 90 days, and (c) makes application for benefits within two years after separation from service, or two years after termination of the war, whichever is the later date, but in no event more than five years after the end of the war.

The Act applies equally to women as

well as to men who have served in the armed forces. In many instances, both husband and wife will be eligible for business loans and may, if they elect, pool their borrowing power.

Who Makes the Loans

As already indicated, the government does not make loans for business financing under terms of the Act. The Veterans Administration merely undertakes to guarantee fifty percent of any loan up to a guarantee not to exceed \$2,000. Thus, if the loan is for \$1,000 the government will guarantee only \$500. Moreover, in event of a loss sustained on the loan, the government undertakes to assume only its share of the loss. That is, say a loan of \$4,000 has been made on which the government guaranteed half or \$2,000 and the veteran goes into bankruptcy and only half of the original loan is recoverable. The government would sustain half of the loss of \$2,000 and the lending agency would assume the balance.

While the government sets a limit

of \$2,000 on the amount of the loan it guarantees, this does not restrict the loan to \$4,000 as many believe. The lender may loan as much as he wishes, the government guaranteeing only up to \$2,000 of the total loan.

It should be apparent at once that such loans cannot be entered into lightly and that good banking practice must be followed. In each instance, the lender is risking at least half of the loan—and at relatively low interest rates, too.

The loans may be made through regular banking channels: banks, building and loan associations or finance companies, insurance corporations or private individuals, even veterans' friends or relatives. However, to guard against excessive interest rates, the government will not guarantee any loan on which interest in excess of four percent annually is charged. To give the veteran a boost, the government will pay the first year's interest on that part of the loan which it guarantees. On a \$4,000 loan this

[Continued on page 57]



Veterans "bone up" on civilian radio receiver circuits and servicing.

RADIO FOR VETS

War veterans' interest in radio as a peacetime business and hobby is apparent in the appeal which the radio shop, recently completed by the Hallicrafters Company, Chicago, at the Vaughan General Hospital, has for returned servicemen undergoing treatment for disabilities. The hospital's radio room, made possible by William J. Halligan, Hallicrafters' president, following consultations with Brig. Gen. Percy J. Carroll, commanding general of Vaughan, has brought radio into prominence as part of the veterans' occupational therapy program.

The *radio room* consists of two sec-

tions, a *repair shop* and a code practice room. It is supplied with complete text and repair equipment, work benches, storage cabinets, shadow boards for tools, parts kits, charts and textbooks.

The code room is furnished with code tables, telegraph keys, headphones, automatic tape machine, etc. Both rooms have fluorescent lighting, and feature acoustically treated ceilings and permanently installed ventilating fans. The repair shop can accommodate approximately 50 patients at one time. There is plenty of room for the veterans to be seated

and sufficient aisle space for wheel chairs. Three Hallicrafters receivers, Models S-22R, SX-28A and S-36, are installed in the code room, making it possible for patients to listen in on any frequency from 110 kilocycles to 143 megacycles.

Cyrus T. Read, director of sales engineering for Hallicrafters, made the survey of the hospital's radio needs and supervised the subsequent planning. The company not only financed and supervised the construction and installation of furnishings and equipment, but is following through on a promise to provide technical advice and assistance in the radio shop's operation.

SALES AHEAD!

Estimate of radios and appliances people will buy during first full year following complete reconversion, based on twenty consumer surveys studied. Volume at average 1941 dealer prices conservative.

THE American public will pay \$775,552,000 for the 50,400,000 small electrical appliances and radios it will buy in the first full year following reconversion, the General Electric Company estimates. Excluding radios, sales of such appliances as irons, toasters, clocks, vacuum cleaners and automatic blankets will run to 35,400,000 items valued at \$320,302,000.

These figures, based on over 20 authoritative surveys and estimates, are cited by the company's Appliance & Merchandise Department. Designed to acquaint G-E appliance dealers with the devices they will sell in the months ahead, a new booklet, entitled "G-E Traffic Appliances—A Preview," outlines the special sales helps the company has to offer. These include a large-scale radio, magazine and "tie-in" newspaper advertising campaign, modern displays, extensive war-born servicing facilities and a complete finance service.

WHAT DEALERS WILL SELL

Appliance	Number to be sold	Aver. 1941 retail price	Volume based on 1941 retail price
Iron	7,250,000	\$5.00	\$36,250,000
Toaster	4,100,000	6.75	27,675,000
Mixer	1,100,000	22.00	24,200,000
Roaster	420,000	25.00	10,500,000
Coffee maker	2,260,000	3.75	8,475,000
Percolator	1,100,000	3.00	3,300,000
Grill	800,000	2.50	2,000,000
Waffle iron	1,100,000	5.50	6,050,000
Clock	7,800,000	5.00	39,000,000
Fan	2,780,000	7.50	20,850,000
Heating pad	1,790,000	3.00	5,370,000
Sandwich toaster	1,250,000	4.25	5,312,000
Heater	810,000	4.00	3,240,000
Cleaners	2,390,000	47.00	112,330,000
Blankets	450,000	35.00	15,750,000
	35,400,000		320,302,000
Radio	15,000,000	30.35	455,250,000
	TOTAL		775,552,000

Ready to Buy New Radios

Iowans in 238,000 homes are ready to buy new radios, when they again become available, and are willing to spend about 12 million dollars for them, a survey by The Iowa Poll reveals. Told that new receivers may be on the market "by Christmas" this year, those reached in the survey reported they intend to buy as soon as sets are offered by dealers, or within the next six months. Iowans in cities indicated they would buy 95,914 units, at a retail cost of \$5,325,770.

Town, Farm Units

Those in Iowa towns expect to buy 51,239 units, for \$2,787,456; those on farms, 91,051 units, costing \$3,990,-

385. In all, the survey showed 238,204 units would be bought in six months at a retail cost of \$12,103,611.

Those indicating they would buy new sets were asked what they would be willing to spend. Iowans' intentions from a dollars and cents standpoint, were grouped thus:

Cost Range	Units	Retail Value
\$25 and less	30,155	\$ 753,875
\$26 to \$50	74,757	2,840,766
\$51 to \$75	13,917	876,771
\$76 to \$100	39,548	3,480,224
\$101 to \$125	4,669	527,597
\$126 to \$150	10,756	1,484,328
\$151 to \$200	5,950	969,850
\$201 and over	5,851	1,170,200
Undecided	52,601
TOTAL	238,204	\$12,103,611

In projecting retail values, above,

the middle figure in each price range was used.

Interest in purchase of new radios was influenced to some degree, the survey showed, by the fact that appreciable percentages of present equipment were out of order.

This was about 8 per cent in cities over 2,500 population, 13 per cent in towns and 15 per cent among farm families. Well over half those with radios not working indicated they intended to buy new sets.

The findings were gathered as part of one of our regular every two weeks Iowa Poll surveys. The people interviewed constitute an accurate, representative cross section of Iowa. This we know from the results of control questions from which we can compare not only with past experience but with available data such as the number of telephones, radio ownership, farm sizes, income tax payments and voting behavior.

SETS GO TO DEALERS

FIRST civilian home radio receiver to come off the production line at the Stromberg-Carlson Company's plant since shortly after Pearl Harbor was packed September 13 for shipment on the 14th via air express to 55 distributors and branch offices throughout the United States and Hawaii. The advance 1946 models began arriving at their destinations September 15, according to Clifford J. Hunt, manager of radio sales.

The first model to make the long-awaited-for trip down the assembly line was a plastic table model. Then will follow the beginning of large scale production of table and console radio-phonograph combinations. The models shipped are equipped to receive AM broadcasts only. The company's new and greater FM receivers will be a little longer in coming, Mr. Curtis declared, estimating that they would be in quantity production "before the first of the year."

FM will play a large part in Stromberg-Carlson's efforts to provide dealers with top quality radio instruments as quickly as possible, Lee McCanne, vice-president and general manager, states. He revealed that engineering designs had been prepared for all possible allocations discussed by the FCC, and now that the new band is definite, have been incorporated in three entirely new chassis units, each providing reception on AM, short wave, and double limiter operation on the old and new FM bands. These will be housed in more than 20 different cabinet or cabinet finish models, covering a price range from \$100 to \$500.



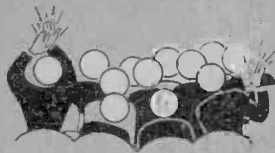
ABOVE, left (reading down): Personal "Newscaster" model, ac-dc, brown or ivory plastic; standard reception; automatic volume-tone control; built-in loop. Middle: "New World", combination, includes present and new FM bands. Push-button and manual tuning. 12-inch dynamic speaker. Bottom: Mock-up model of set in middle right (Dynatomic).

Right (reading down): "Futura", modern cabinet variation of "New World". Middle: "Dynatomic"—table model — dial housing combines a hand-hold at top of plastic case, brown or ivory. Superhet. 6 tubes (4 amplifiers, one rectifier-amplifier, one power rectifier). AC-DC, tuned radio frequency stage, built-in loop antenna, dynamic speaker. Bottom: "Impresario", table phono-radio; AM and spread-band short wave, both with tuned RF stages; mahogany case; automatic record changer; 6 push-button tuning, vertical dial, tone control, PM dynamic speaker. Console models will go into production after January 1, 1946.



Stromberg-Carlson packer puts first postwar civilian radio in container for shipment to dealers. Left to right: F. C. Young, vice president, engineering and research; Clifford J. Hunt, manager of radio sales; Dr. Ray H. Manson, president; S. Curtis, vice president, production.

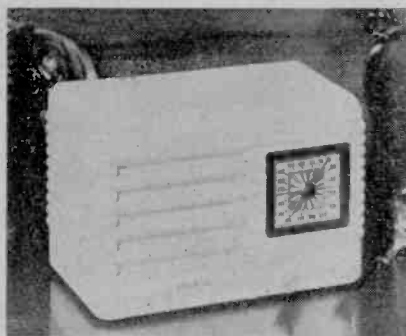
New Products



Readers desiring additional information about the home radio receivers, traffic and major appliances pictured and described in this special feature section, should write to **NEW PRODUCTS EDITOR, RADIO SERVICE DEALER.**



HALLICRAFTERS FM converters. Above, 5-tube converter; below, 3-tube model. Used with typical prewar FM radio receivers designed for reception on the 42-50 megacycle band, making it possible to receive the program on the new 88 to 108 megacycle band. The Hallicrafters Company, Chicago, Ill.



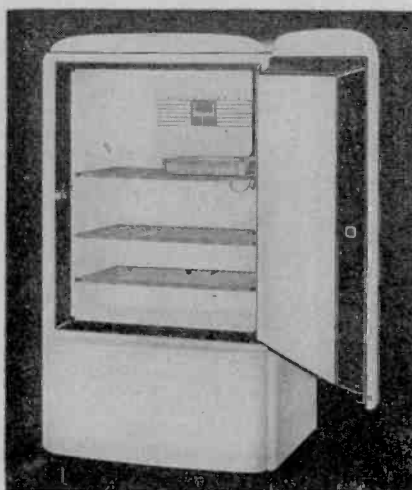
HOWARD 901 Table model, ac-dc, 5-tube, 1-band, dynamic speaker, AVC, built-in antenna, plastic cabinet, walnut or ivory. Model 902, in same style cabinets, has 2 bands, 8C & foreign shortwave (140-1700 KC, 6-18 MC). Howard Radio Co., Chicago, Ill.



WESTINGHOUSE New upright home freezer, companion piece to household refrigerator, front-opening and sectional inner doors for reach-in convenience. Westinghouse Electric Corp., Mansfield, O.



GAROD 8APX7 Console-combination; AC super-het, 3 bands, domestic & foreign, one additional spread band (25-31 meters); push-pull audio, 3-gang condenser tuning with RF stage. Phonograph, 2-post automatic record changer; 2 record storage compartments. "Gorgeous" model comes in bleached mahogany, walnut and natural mahogany. Below: Model 6FS2, farm console; 6-tubes, easily adapted for use on ac-dc; 3-gang condenser tuning with extra RF stage; 1000-hour farm battery pack included; concealed loop antenna. Garod Radio Corp., Brooklyn, N. Y.



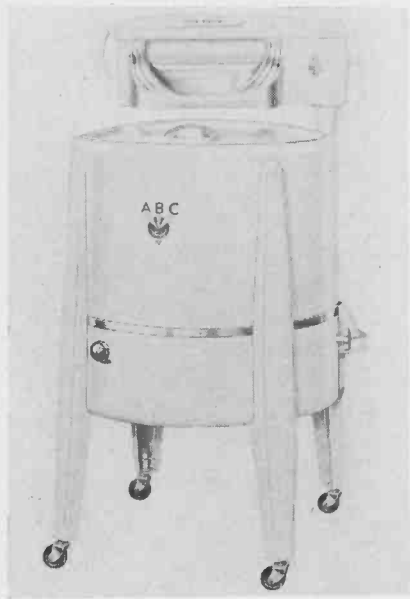
HOTPOINT Doric model, 7 cubic feet, 11.7 sq. ft. of shelf area. New Thrift-master vacuum-sealed unit; door strips of Textolite; interior in white porcelain, 1-piece construction, four poplce-cube trays. Height 59 inches; 39 inches wide; overall depth 28 1/2 inches. Edison General Electric Appliance Co., Chicago, Ill.



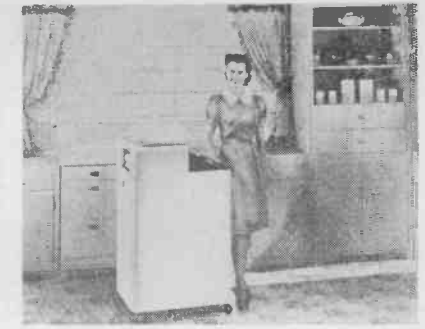
VIEWTONE Table model television receiver (\$100). Shown with image 5 x 7 inches; line also includes console model (\$175) to which either a 5 x 7 inch or a 10 x 12 inch screen may be adapted. Viewtone Co., New York, N. Y.



RADIO SERVICE DEALER

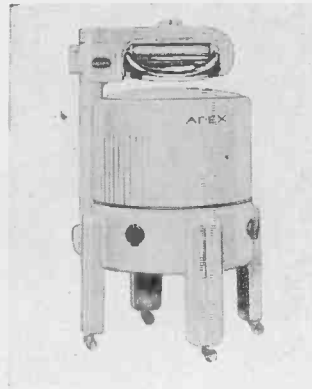


ABC Model 251-S, heavy duty, 27-gallon capacity, wringer type washer. Wringer with self-adjusting coil-spring tension, with 6-way pressure release. Shafts precision-ground to close accuracy, heavy-duty gears machine cut and heat-treated; forced feed lubrication to all bearings above as well as below oil line. "High-post" agitator; also available with built-in gasoline engine for farms. Altorfer Bros. Co., Peoria, Ill.

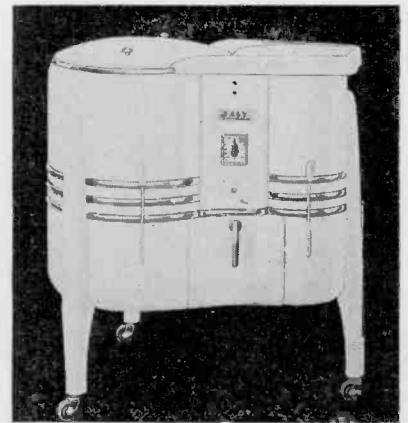


ABC-O-MATIC Agitator washer — omits set tubs and tub rinsing. Built-in, patented, scum-free rinsers automatically rinses in clear water which carries away soap before scum can form. After rinsing, clothes are automatically damp-dried and deposited in a waiting basket, ready for line. Compact, portable, needs no auxiliary equipment. Altorfer Bros. Co., Peoria, Ill.

BENDIX Standard model, automatic home laundry. 14 new improvements; machine now fills from top, 2 deep rinses instead of 1, with additional flush rinse. Holds 9 lbs. of clothes. Automatically washes, rinses, damp dries; drains, cleans and shuts off. Bendix Home Appliances, Inc., South Bend, Ind.



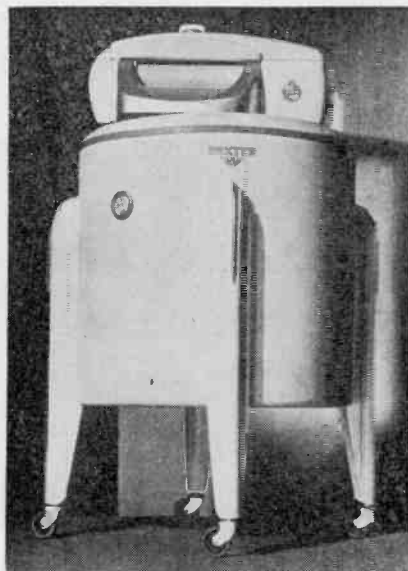
APEX Wringer type washer (reconversion model) with "free running" mechanism and "Spiral Dasher" agitator. Apex Rotarex Corp., Cleveland, O.



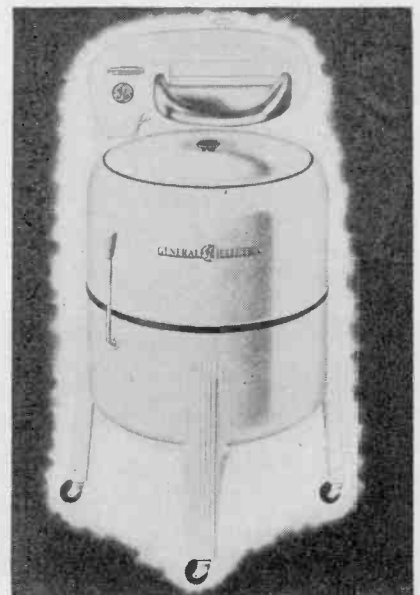
EASY Spindrier—"does an entire week's wash in one hour". "Spiralator Spindrier." Easy Washing Machine Corp., Syracuse, N. Y.



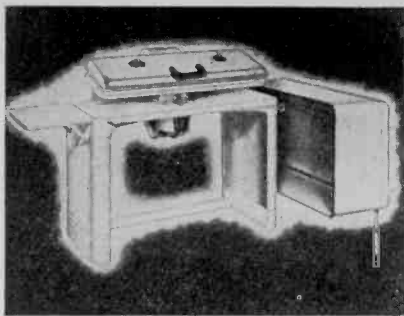
WESTINGHOUSE Automatic clothes dryer. Identical in size and shape to the Laundromat, automatic washing machine, dryer will perform its complete cycle in approximately the same length of time as does the laundromat, thus permitting washing a second load of clothes while the first is being dried. Westinghouse Electric Corp., Electric Appliance Division, Mansfield, O.



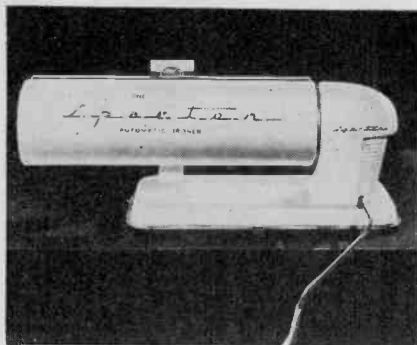
DEXTER Model 454E, single tub washer. Fitted with Dexter aluminum wringer, improved "sealdheet" around tub, keeping water hot all thru washing; automatic "temptgauge" with dial on cabinet shows the water temperature. Dexter Co., Fairfield, Iowa.



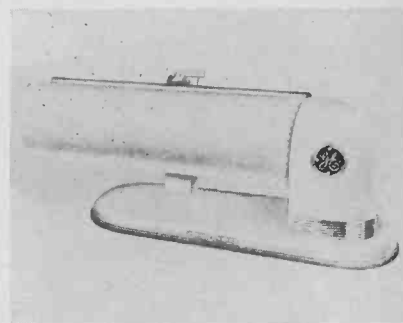
GENERAL ELECTRIC Washer, model AW-322; wringer type; capacity 8 pounds of dry clothes. Aluminum alloy activator; improved 1-control wringer, controlled by fingertip handle. Spring-mounted pump empties tub in about 2 minutes. Activator control lever at hand-height, shifts horizontally for easy operation. 4 moving parts in Permadrive mechanism, powered by 1/4-h.p. G-E motor, mounted in live rubber. General Electric Co., Appliance & Merchandise Dept., Bridgeport, Conn.



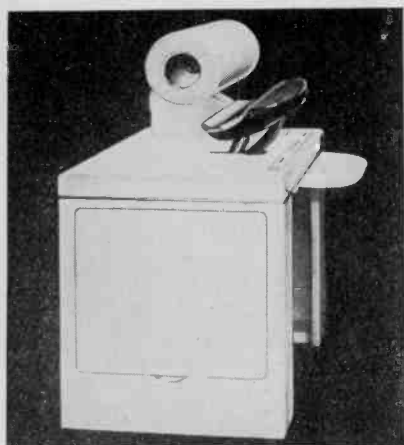
GENERAL ELECTRIC Flat plate ironer, model AF-12. 300 sq. inches of ironing surface, up to 400 pounds of hydraulic pressure. Patented G-E Thrustor; no oiling needed. Two Calrod heating elements clamped to cast aluminum shoe; 2 thermostats for individual temperature control for each end of shoe. Console type cabinet, top giving a flat work surface. General Electric Co., Appliance & Merchandise Dept., Bridgeport, Conn.



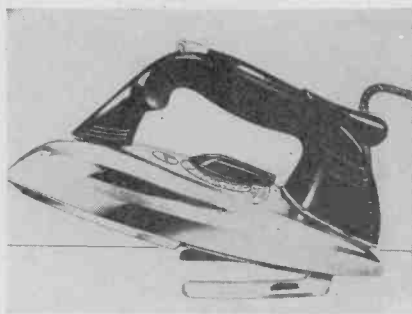
SPARTON Automatic portable ironer, model 10. Shoe operated automatically; control by universal multi-position lever, either hand or knee operated. Uniform high shoe temperature thermostatically controlled by dial. 6-inch roll turns forward or backward when shoe is released; 22 inches long; 5 inches wide. Overall size of unit, 29 x 11 x 15; weight 37 pounds. Sparks-Withington Co., Jackson, Mich.



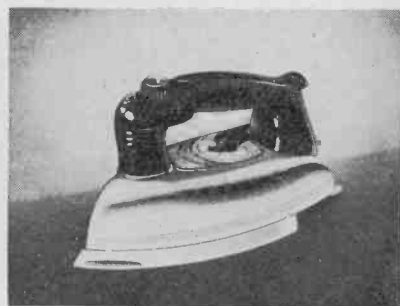
GENERAL ELECTRIC Rotary ironer, model AR-18. Portable, 28 inch. long, 13 inch. high, 10 inch. deep; weight 33 pounds. Chrome plated ironer shoe, 110 square inches of ironing surface. 6-inch diameter roll is open at end for convenient operation. Automatic control handle in operating head permits starting and stopping roll and applying pressure; handle can be operated with hand or knee. Release lever moves shoe away from roll in case current goes off. General Electric Co., Appliance and Merchandise Dept., Bridgeport, Conn.



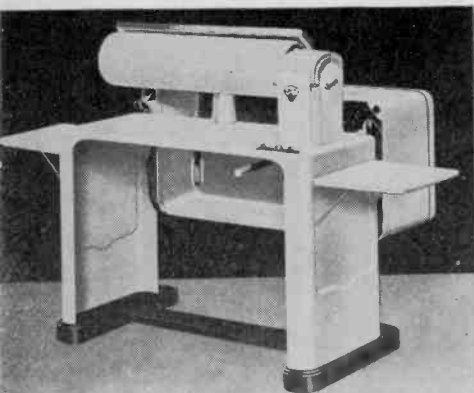
BENDIX Automatic ironer; offers advantages of rotary and flat plate types. Adjustable lap board and adjustment for leg clearance from 22½ inches to 23½ inches. 3 open ends; two on the shoe and one on the roll. Two thermostats independently control temperature for both ends of shoe. 2 utility shelves; moving parts lubricated for life. Fully automatic safety release, finger-tip and adjustable knee controls, illuminated control panel indicators for motor and temperature. Bendix Home Appliances, Inc., South Bend, Ind.



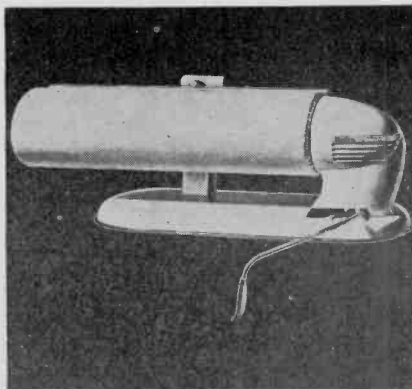
PROCTOR Model 961, Never-Lift iron, fully automatic, 1000-watt, a-c, dial-of-fabric, with speed selector, "Dreadnaught" heating unit and patented Never-Lift stand. Available in time for Christmas shopping. Proctor Electric Co. (Division of Proctor & Schwartz, Inc.), New York, N. Y.



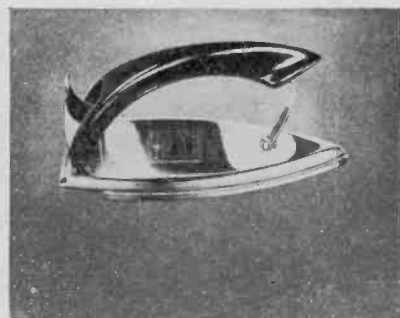
GENERAL ELECTRIC Iron, model F-20. All-iron steam iron, automatic features plus steam; can be switched back and forth from steam to dry ironing by control knob on the handle. Temperature regulated by Dial-the-Fabric control; weight 4½ pounds empty, 5 pounds when filled with half pint distilled water. General Electric Co., Appliance & Merchandise Dept., Bridgeport, Conn.



APEX Ironer, model 541. Dual thermostats for heat control; end-garment shoe; floating roll, folding end shelf, dual switches and pilot light. Easy, convenient control. Apex Rotarex Corp., Cleveland, O.



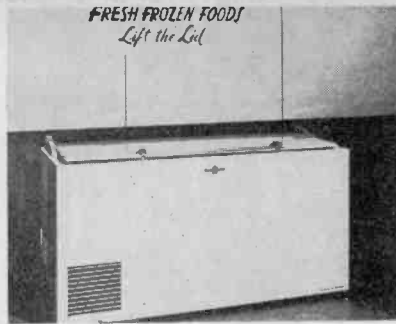
HORTON "Diamond Jubilee" portable ironer; single central control lever for all operations: starting, stopping, pressing; accurate thermostatic heat control regulates temperature to suit any fabric. Horton Mfg. Co., Fort Wayne, Ind.



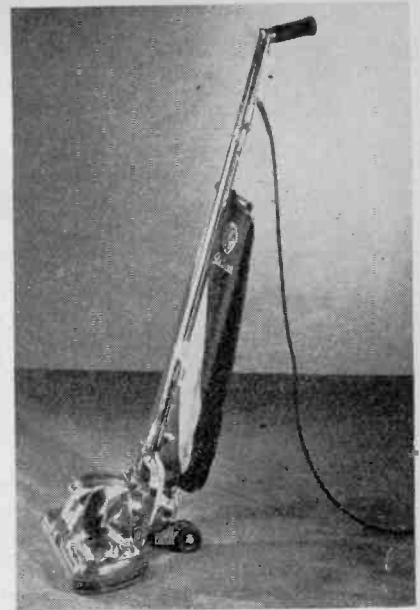
GENERAL ELECTRIC Iron, model F-18. Compact traveling iron; weight only 2 pounds; folding handle allows fitting in a small traveling case furnished with iron. Indicator on top shows correct soleplate temperature for safe ironing; heavily plated to resist corrosion from salt water air. Textolite plug is reversible; handle has thumb rest on both sides for right or left hand use of iron. General Electric Co., Appliance & Merchandise Dept., Bridgeport, Conn.



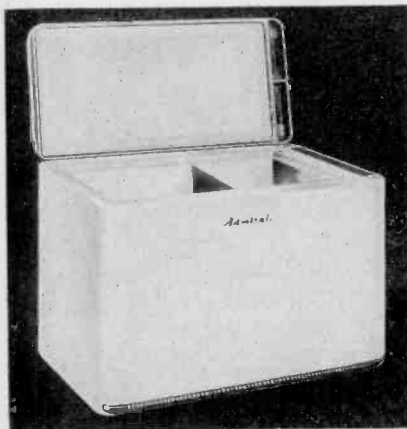
GAROD Tabel model 6B1; ac-dc 3-gang tuning with RF stage; concealed loop. In walnut or ivory; plastic case; large numerals on horizontal dial scale, of Lucite. Garod Radio Corp., Brooklyn, N. Y.



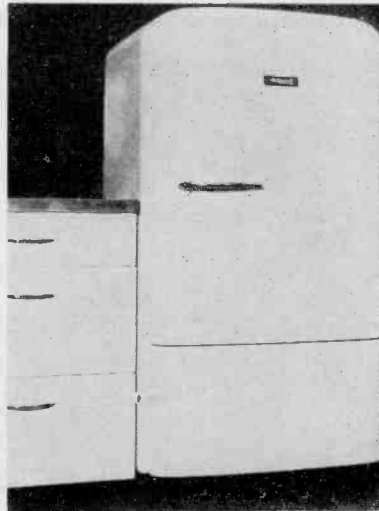
COOLERATOR Model F155, farm freezer. Outside size, 30 inch. wide; 72 inch. long; 38 inch. high; 15 cu. ft. volume; 13 cu. ft. storage compartment. Tecumseh compressor, hermetically sealed; 1/3 h.p. motor, fan cooled condenser. Coolerator Co., Duluth, Minn.



GENERAL ELECTRIC Vacuum cleaner, model AVF-19. Sereamlined, deluxe; 2-speed motor (used slow for incidental daily cleaning, fast for thorough weekly cleaning). Semi-automatic foot-operated nozzle adjustments for every thickness of rug. Handle lock also foot operated; hollow handle has room for dustcloth. Finish, polished aluminum, maroon trim; 25-watt lamp spotlight. General Electric Co., Appliance & Merchandise Dept., Bridgeport, Conn.



ADMIRAL Home freezer, 6 cubic foot size; two compartments, one for quick freezing and one for storage. Wire baskets in the storage compartment facilitate handling of food. Admiral Corp., Chicago, Ill.



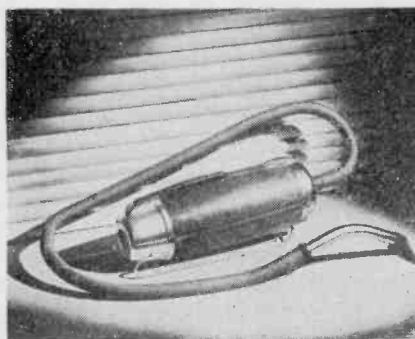
HOTPOINT Past war model 12EA7-0—exterior view of "Doric", 7-cubic foot refrigerator. Edison General Electric (Hotpoint) Appliance Co., Inc., Chicago 44, Ill.



HOOVER Vacuum cleaner, model 27; features instant conversion, formerly on deluxe models only. Now in production, limited supplies available to dealers by Christmas. Hoover Company, North Canton, Ohio.



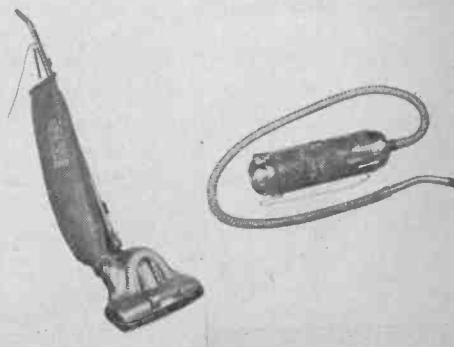
FILTER QUEEN Bagless vacuum cleaner; consists of a dust-pan, filter cone and power unit. 2/3 h.p. Black & Decker motor moves 40 cu. ft. of air per minute. Cellulose filter removes dust and dirt, drops into sealed, metal dust-pan. Comes with dust-brush, nozzle, crevice tool, shampoo and wax sprayer, demother. Health-Mor, Inc., Chicago, Ill.



APEX (above) Cylinder vacuum cleaner, model 124. Attachments for waxing floors, shampoo rugs, clean bed springs, venetian blinds, radiators, etc.

Below, at right: Left, model 600; positive brush agitation; attachment coupling permits quick use of attachments for "off the floor" cleaning.

Right, Cylinder vacuum cleaner, model 140. Complete set of attachments; switch control operates with touch of toe. Apex Rotarex Corp., Cleveland, Ohio.



DON'T LET "INTERMITTENTS" Get You Down!

THE most vexing claim on the serviceman's patience, resourcefulness, time and effort is the intermittent receiver. The receiver that lapses into complete or partial in-operation, sometimes only momentarily, and often returns to normal operation at the slightest attempt to check for the trouble, proves the bane of his existence. A high percentage of these patience-taxing service problems can be overcome by handling this type of receiver trouble with the method given in this article.

For the repair of an intermittent receiver, two steps are necessary:

1. The signal failure must be made to occur;
2. The cause of the signal failure must be determined.

Both of these steps can be very troublesome. In the first place, when the receiver chassis is taken from the cabinet, operating temperature changes occur which may allow the receiver to operate endlessly without the intermittent condition being made manifest and, if the receiver chassis is taken to the shop, line voltage changes, as well as operating temperature changes may preclude its "cutting-out". In the second place, once the signal failure occurs, i.e. the receiver "cuts-out", the condition may be so critical that the mere touch of meter, signal generator, or other test equipment leads will produce sufficient surge-effect to restore the receiver to operation, often making it still more difficult to again cause the receiver to cut out.

High Operating Temperature

Generally, the intermittent effect (including partial signal failure, total signal failure, and signal deterioration due to intermittent regeneration or oscillation) is produced by a critical receiver-operating temperature in conjunction with some particular value of line voltage. Thus, when a set cuts out after playing for a while, it means that the line voltage has caused the

Majority of patience-taxing intermittent receiver servicing problems can be licked with these methods.

by C. C. ROBERTS

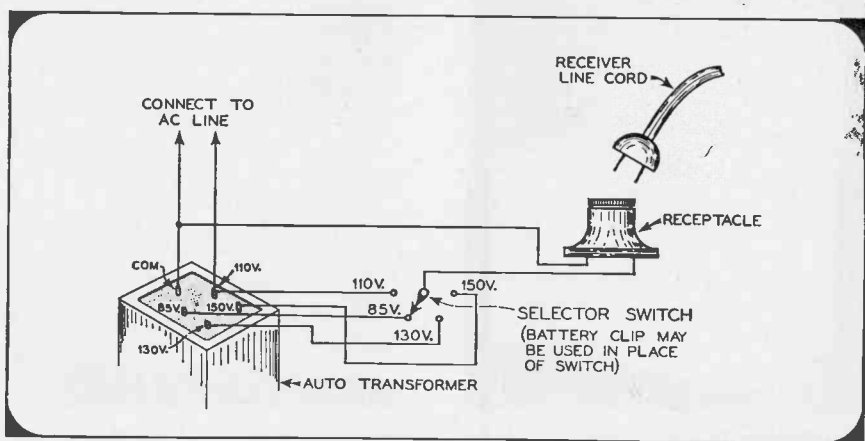
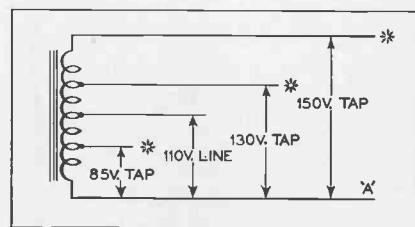


Figure 1A (above): Auto transformer tap arrangement. Figure 1 (below): Auto transformer. *Connect receiver a-c cord between common 110-volt line "A" and selected tap.

operating temperature to rise to some critical value. Of course, this is not the only factor involved, because the conditions necessary for the receiver to cut out may not be present merely with a high line voltage. In other words, the line voltage may be initially high in order to raise the operating temperature, but must then drop to some lower value in order to cause the receiver to cut out. (NOTE: *The effect of very low operating temperatures will be covered at the conclusion of this article.*)

The effect of the operating temperature on the parts components of a receiver is to lower the viscosity of the impregnating compound of coils and condensers and to produce an expansion and contraction of metal surfaces. These two effects combine to cause open circuits or short circuits within the parts themselves, or in the outside wiring of the receiver, because a change in the viscosity of the impregnation allows more freedom for this expansion and contraction. Thus,



as an example, two metal surfaces supposed to make electrical contact may be held together by the surrounding impregnating compound while that compound is cool and stiff, but may be allowed to separate when the compound is heated and becomes more liquefied. Concretely, the two metal surfaces may lie:

1. An unsoldered connection between the external lead and the actual winding of an r-f, i-f or power transformer, or of a choke coil, (or any other loose connection within the part, that is underneath the impregnation) (See Fig. II).

2. A loosely riveted or pressed con-

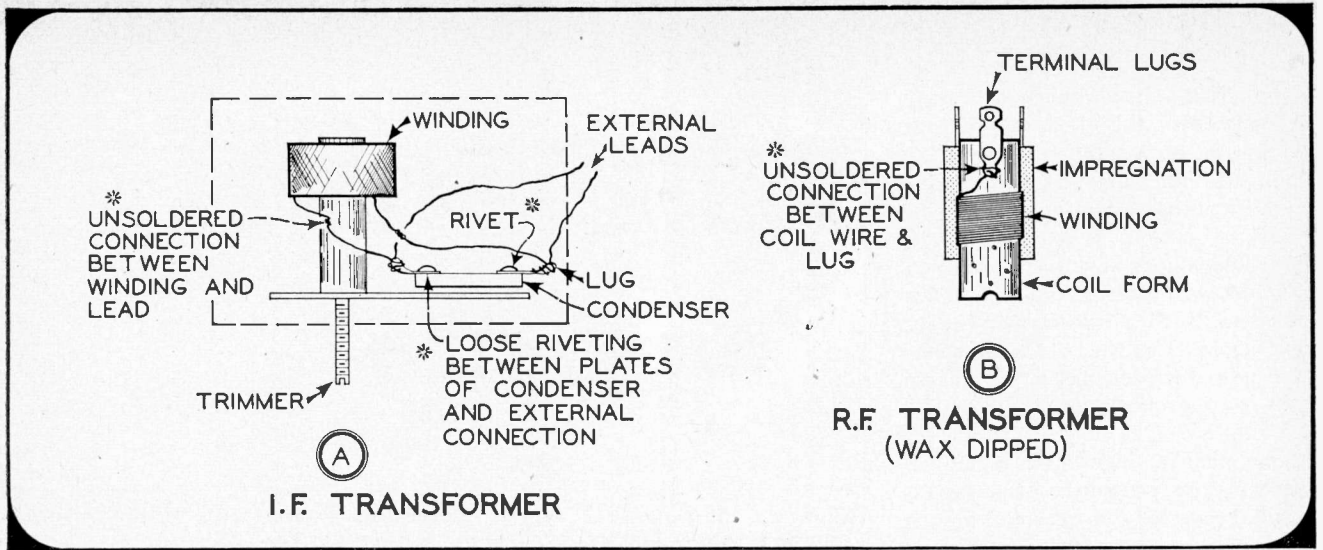


Figure 2. Typical sources of intermittents within transformer assemblies and coils. *Indicates connections referred to in text (page 46). (Note: secondary winding omitted for simplicity).

nection between the plate or foil of a condenser and the external contact. (See Fig. III).

- 3. A movable element within a tube.
- 4. Faulty resistors. (See Fig. IV).

(NOTE: Ordinary loose or unsoldered connections in tubes, wiring or any other component part are disregarded in this discussion because the simple process of jarring or tapping the receiver is the best method both of making such troubles manifest themselves, and, of locating them.)

The effect of the softening or liquification of the impregnation is twofold. As previously stated, it allows the elements of the connection to separate, furthermore some of the impregnation is invariably between the elements of the connection and thus produces varying degrees of resistance in the connection. This latter effect is responsible for the intermittent condition being critical so far as line voltage is concerned. When there is a relatively low resistance break (pro-

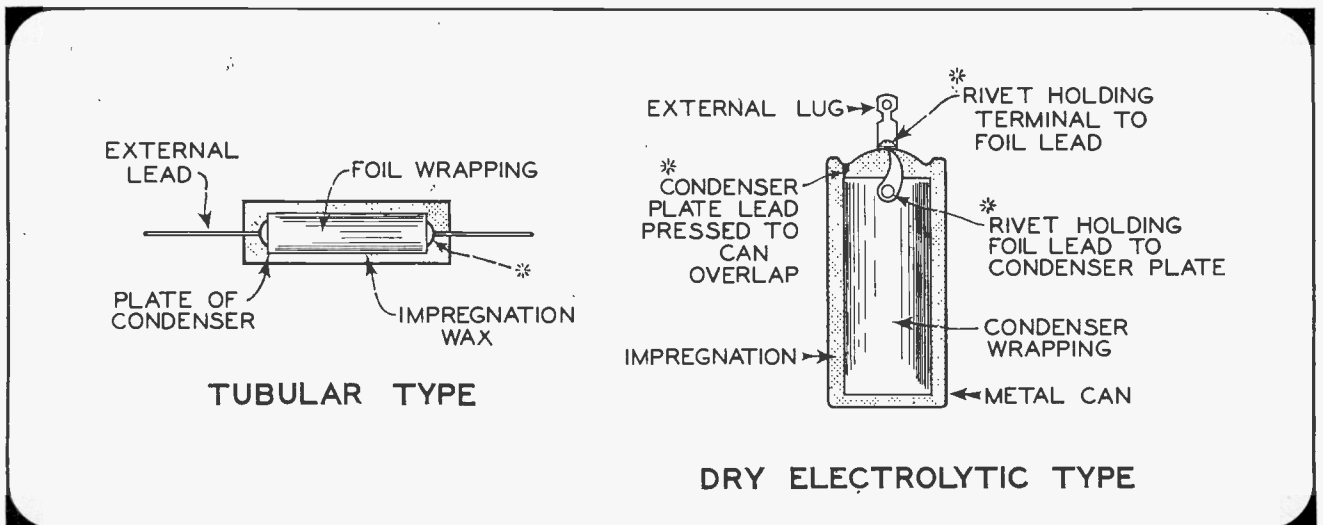
duced by a high operating temperature) the receiver tends to cut-off at the lower extremes of line voltage, whereas with a high resistance break (produced by a high operating temperature) the receiver tends to cut-off at the higher extremes of line voltage. This, of course, is due to an arcing effect with the low resistance break directly resulting from surges in the circuit of the receiver.

The intermittents traceable to non-impregnated parts, (i.e. tubes and resistors; excepting those cases that obviously are loose connections as evidenced by jarring or bumping the parts themselves or the receiver chassis) are affected by operating temperatures and line voltages in the same manner as that previously described for the impregnated parts, although they are not nearly as critical or hard to find because of the freedom for expansion present due to the absence of impregnation.

The Procedure

1. From the foregoing general analysis, it can be seen that the first condition to create, in order to cause the receiver to cut out, is the high operating temperature. Furthermore, by making this temperature as high as safety will permit, maximum expansion of the metal surfaces will be attained. In order to have the receiver chassis in an accessible position, it should be removed from the cabinet and placed on the bench so that it stands on end. This gives ready access to both the tubes and the components located underneath the chassis. A broadcast station signal should be tuned in and the volume control of the set adjusted to slightly less than normal room volume. A heavy cardboard box should then be placed over the receiver chassis so as to completely cover it, leaving the loud speaker on the outside. This will produce a rising operating temperature by preventing

Figure 3. Typical sources of intermittents within condensers. *Indicates connections referred to in text (above).



any air circulation and thus any cooling effects.

2. The second condition to create is the critical line voltage necessary to break down the offending part or recreate the signal and supply voltage conditions necessary to produce the intermittent operation and cause the receiver to cut-off. To obtain the necessary line voltage an auto-transformer, (Fig. 1), with voltage taps as shown, is needed. Such a transformer can be constructed from an old automobile radio power transformer or purchased ready made from "Jensen", "Kenyon" or "Thordarson".

Note that a high voltage tap of 150 volts is provided. This tap is advantageous for two reasons: first, it can be used to cause a rapid rise to an abnormally high operating temperature especially when used in conjunction with the cardboard box; second, it can be used to cause abnormally high signal and supply voltages (plate voltages, filament voltages, etc.) thereby accentuating any possible arcing on breakdown in the condensers, resistors, or tubes as well as forcing the maximum expansion of those impregnated surfaces described as being the causes of intermittent conditions. The remaining taps are provided in order to have both low and intermediate line voltages available as shall be later shown.

Receiver Cut-Off

The complete procedure that should be followed in order to make the intermittent receiver cut-out follows:

First, connect the line cord from the receiver through a receptacle and thence through the auto-transformer to the 110 volt line (as shown in Fig. 1-A) with the auto-transformer tap fixed at the 110 volt position.

Second, tune the receiver to some broadcast signal (preferably one from a broadcast station one to three hundred miles away or, if this is not feasible, use a low powered local station and no or very little antenna. This is done in order that any drop in sensitivity will be readily noticeable) and adjust the volume control so that slightly less than normal room volume is attained (By doing this the possibility of heavy fluctuations of audio signal voltage that would tend to arc-over and clear the trouble when it is in the audio portion of the set are eliminated).

Third, allow the receiver to "warm up" for several minutes.

Fourth, change the tap on the auto-transformer so as to raise the line voltage to the receiver to 140-150 volts and allow the receiver to operate at

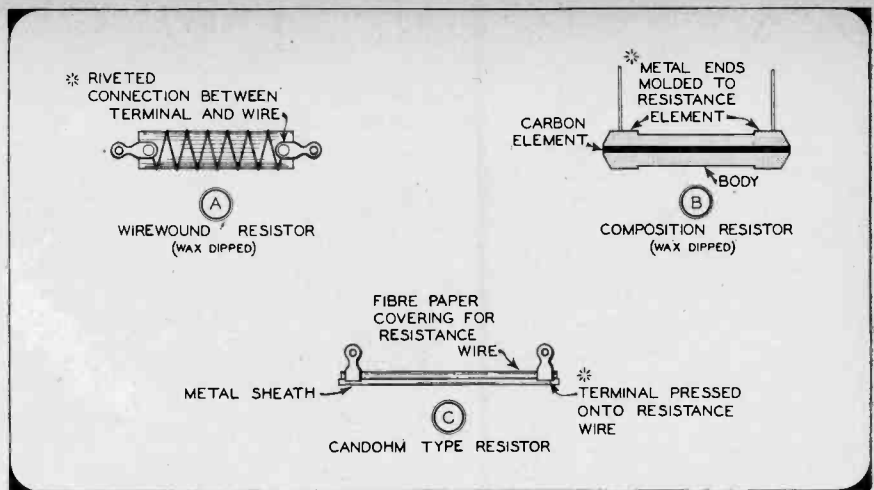


Figure 4. Illustration of typical sources of intermittents within resistors. *Indicates connections referred to in text (page 47).

this voltage for three or four minutes. Note: All types of receivers will stand this high voltage for this short length of time with the exception of the A.C.-D.C. type receivers, which will stand no more than 130-135 volts for short periods of time. If the receiver cuts-out while this high, or any, voltage is being applied, the steps to be given later in this article for locating the trouble should be followed.

Fifth, change the tap on the auto-transformer to give a line voltage of 125 volts to the receiver and allow the receiver to operate under this condition for five or ten minutes. Should the receiver fail to become inoperative, the next step should be taken.

Sixth, change the tap on the auto-transformer to give a line voltage of 85 to 90 volts to the receiver and allow the receiver to operate under this voltage for five or ten minutes. *If the receiver still fails to cut-off, the entire procedure from step one on, should be repeated, although that is seldom ever necessary.*

Once the receiver has cut-out, the problem becomes one of simply locating the trouble, and, with certain ramifications, can be handled in the same way as an ordinary trouble. The difference lies in the fact that most intermittent conditions are extremely unstable and, although the method of producing the intermittent effect that has just been given, tends to stabilize this condition, extreme caution must be used in locating the trouble. A definite procedure must be used:

First, isolate the trouble as to the stage wherein it exists.

Second, find the defective component.

Application of Signal Generator

When the receiver cuts-off, the auto-transformer line voltage setting

should not be changed from whatever value at which it was set when the receiver failed, nor should the volume control or tuning dial be touched. The first thing to do is to isolate the stage in which the failure occurred. To do this a signal generator is necessary. First, set the signal generator for an audio signal and turn the attenuator on fully. Grasp the ungrounded lead of the signal generator between the palm and last three fingers of the hand. Extend the index finger and very lightly touch the grid of the last audio tube, gradually exerting more pressure. (NOTE: *If the signal generator is a-c operated, it may be necessary to reverse the a-c plug of the signal generator to avoid a shock*). If no signal is heard, steps must be taken to locate the defective part. If a signal is heard, the audio signal should be applied to the next to the last audio tube grid in exactly the same manner as was done for the last audio tube grid and so on up to the signal diode of the second detector.

By applying the signal from the signal generator in the manner just described, sharp signal surges are avoided and therefore the possibility of causing the set to resume operation is minimized. It is important, therefore, to apply the signal from the signal generator in this manner, throughout the entire operation of isolating the trouble as to stage. (NOTE: *As a further caution to minimize signal surges that might cause the receiver to resume operation, do not connect the ground lead of the signal generator to the chassis at any time once the receiver has cut-out.*

A normal signal from the signal diode of the second detector indicates that the audio and rectifier and also the speaker of the receiver is alright and consequently eliminates those por-

tions of the receiver circuit as being the source of the trouble. The next step, therefore, is to change the frequency of the signal generator to the i-f frequency of the receiver. Leave the signal generator attenuator fully on and apply the signal to the grid of the last i-f tube by using the index finger of the hand in the same way as was done with the audio stages. Proceed in this manner up to the first detector.

If at some point, in the i-f system, no signal is heard, the signal generator lead should be moved to the grid of the first r-f tube (the signal generator should be still tuned to the i-f frequency) and the trimmer adjustments of the dead stage checked and the results interpreted by the method given in the previous article on this subject in the September issue of "Radio Service Dealer" (page 42).

If normal i-f signal is present from the grid of the first detector on, the i-f system of the receiver is operating. The signal generator frequency should be changed to coincide with the broadcast frequency to which the receiver is tuned. If no signal is heard, the components of the oscillator stage of the receiver should be checked with an ohmmeter. If a signal is heard, the signal generator lead should be applied to the grids of the r-f tubes, in succession, and the results interpreted as outlined in the previous article.

Check with Ohmmeter

Once the faulty stage has been identified, the problem becomes one of locating the defective part. Inasmuch as the possibility of shocking the receiver back in to operation still remains, all checking for the defective part should be done with an ohmmeter. By carefully removing the rectifier tube, checks with the ohmmeter can be made. Removing the rectifier tube, instead of turning the power off the set, tends to minimize any surge effect and this should be done before attempting to change tubes or make any continuity checks. Checking with a voltmeter or substituting capacitors or resistors across suspected defective parts should be avoided whenever possible as this tends to produce a surge which is likely to restore the receiver to operation.

Before making any further checks for the cause of failure in any stage, the tube should be eliminated as a possible cause of the intermittent condition. The only way to be absolutely sure that the tube is not the cause is to substitute a new one for the one in use. (NOTE: Change the tube in the dead stage after first removing the

neither tube as previously stated.)

If no signal is present when the signal from the signal generator is injected at the grid of the last audio stage, there are two possible sources of trouble: 1. The rectifier. 2. The last audio stage. The rectifier can be checked by holding a metal object close to the center of the voice coil and observing whether the normal magnetic attraction or pull is present. If it is, the rectifier and speaker field are O.K. If there is no magnetic effect, the rectifier tube should be carefully removed and continuity checks made on the components of the rectifier and the field coil of the speaker. If the magnetic check shows the speaker field and rectifier to be functioning, the last audio tube should be checked by substitution and, after the tube has been eliminated as the cause of the trouble, continuity checks should be made on the resistors, transformers and condensers of the last audio stage as well as the voice coil of the speaker.

If the faulty audio stage is any one but the last stage in the audio system, the possible sources of trouble would be narrowed down to the components of the faulty stage only. The components of the faulty audio stage should be checked by the continuity method. The coupling condensers (which are very often the source of intermittent troubles in the audio system) cannot be checked with an ohmmeter but may be checked with the signal generator, (see Fig. V), using the index finger to avoid signal surges as previously described.

If the faulty stage is in the i-f, r-f or oscillator portions of the receiver, the defective part can be identified by observation of the trimmer reactions and by continuity checks. As before stated the rectifier tube should always be removed before using the ohmmeter.

Low Operating Temperature

Oftentimes the characteristics of the component-source of the intermittent are such that contraction of the metal surfaces is essential for non-operation. In such cases low operating temperatures are involved, hence the receiver either fails to start operating or fails after operating a very short time. The procedure in such cases is the very same as for the opposite operating temperature effect, excepting that an artificially low temperature must be created. There are two ways of cooling the chassis and accomplishing this:

One is to place the chassis out-of-doors for a time. (Obviously this can be effective only when the outside

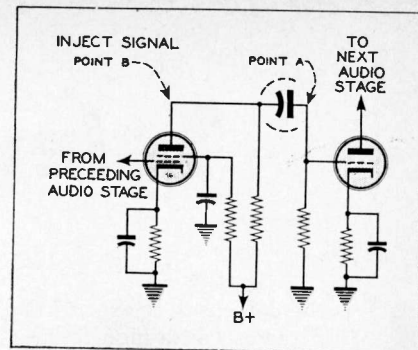


Figure 5. Audio coupling condenser test. Signal present at point "A", but not at point "B" indicates defective coupling condenser (this is shown circled in the dotted line).

temperature is below 40° F, approximately).

The other way is to place the chassis in an empty electric refrigerator, or place it beneath a cardboard box together with a couple of pounds of dry ice, for a time.

Whichever method is used, the receiver should be turned off before being allowed to cool for fifteen or twenty minutes and then removed, plugged in, and checked. As a general rule, in such cases, the auto-transformer should be set at the extreme low line voltage first. If the receiver starts immediately, after being cooled, it should be operated only one or two minutes at a time on each of the voltages supplied by the auto-transformer beginning with the lowest. If the receiver fails to cut-off, or operates instantly on all voltages, it should be re-cooled and the entire procedure repeated.

In some very obstinate cases of intermittents, cooling the chassis to an abnormally low temperature and then heating it to an abnormally high temperature is the only way to invoke the signal failure and, in other instances, the only way to make the signal failure stable enough to handle it with any procedure. Repeating successively the two methods of obtaining the extremes of operating temperatures will have the effect of working the faulty connection, within a component, loose. The receiver should first be cooled and then heated, as previously described, as many times as is necessary to effect a signal failure stable enough to be handled.

If the method of handling intermittents, that has just been given, seems like a great deal of bother, it should be remembered that the positive results obtained eliminate the guess work common to the hit-or-miss methods, and, as a result the likelihood of repeat-calls to the customer's home, as well as customer dissatisfaction, is eliminated.

Television Wrinkles

Pointers on handling of ultra-high frequency radio receivers, installing FM and television antennas

by SAN D'ARCY

IT is the consensus of experts that UHF radios (ultra-high frequency types such as FM and television models) cannot operate at peak efficiency and provide their owners with entirely satisfactory reception unless each and every receiver is aligned and hooked up properly and has its own antenna correctly installed. On that premise we submit that a competent technician should install all UHF radios sold hereafter—and that they should rig the proper type of antenna for any given installation.

Buyers of television receivers should be warned by all dealers that inexperienced persons may endanger their own and other lives if they attempt to “fiddle around” with UHF and television sets. High voltages, quite capable of causing death by electrocution, are used in television radios. True, television sets have a relay cut-off and condenser discharger which becomes effective when the back cover of a set is removed—but some “know-it-all” person is just liable to have a set with a stuck switch, or, believing that they are competent to play with high voltages, may lock-in this switch of a television set and thus place themselves in jeopardy.

There is always the threat of implosion from mishandled Cathode-Ray tubes. Accidents happen and there would be nothing to protect the layman if he were to accidentally “touch” a C-R tube with a hammer or a screw driver. Let's not kid ourselves—it is our duty to educate the public that some of the new radio developments are very dangerous. They certainly are too dangerous for a novice to fool around with. Why even the erection of an antenna on a roof has an element of danger and many people have been killed or injured trying to install antennas. The erection of an antenna, especially on a high or sloping roof, is definitely the job for an experienced man only.

About Antennas

There is nothing difficult about the installation of television or FM radio aeri-als, but patience and experience are required. Ordinary line aeri-als used for regular broadcast receivers will not do for most UHF type radios, and no one type of aerial will be suitable for

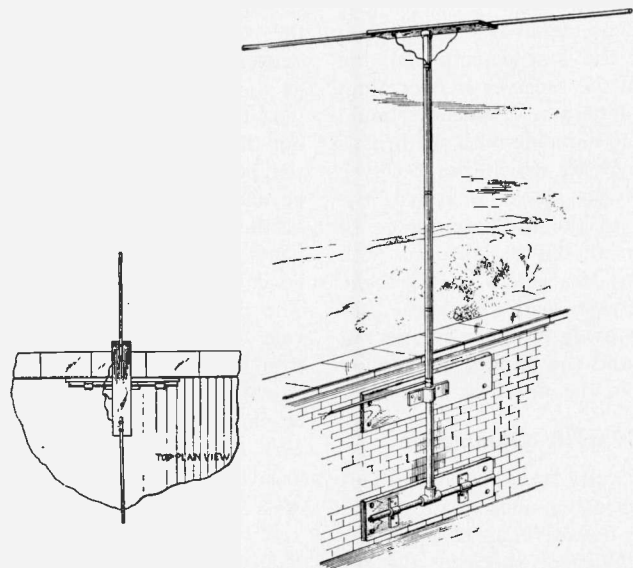


Figure 1. Simple Dipole Antenna

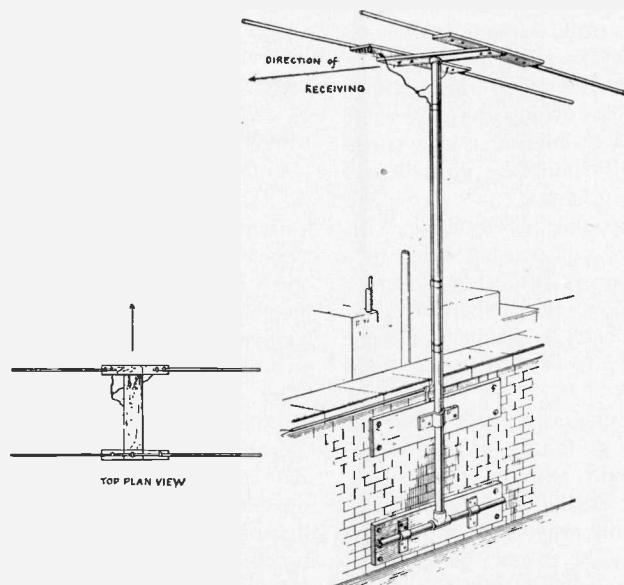


Figure 2. Dipole Antenna with Reflector

(Courtesy of Allen B. Dumont Laboratories)

all television and frequency modulation receivers because there are many variable factors involved in every installation. This fact must be impressed upon set buyers so that they will understand why an additional fee must be charged for the planning and erection of an antenna in conjunction with the sale and installation of UHF sets.

Dipole Antennas

The dipole type aerial shown in *Figure 1*, consists of two metal rods, each approximately 5 feet in length and placed in horizontal line with each other is generally the most satisfactory for FM and television sets. If the receiver is situated very close to the transmitter the length of the rods need not be extremely accurate and sometimes it will be advisable for the installing technician to shorten them.

Antenna Lead-In and Location

The most popular and least expensive lead-in from a dipole to an UHF receiver is a twisted pair. Such will suffice if the set is located where signals are strong and where a not too long lead is required.

Always try to place the dipole in the clear—as high as possible and in a horizontal position so it may be rotated by the installer when determining a "fix point". The dipole should be kept as far away from electrical lines and as far away from street traffic, flashing signs, etc., as is possible because all of these cause interference. Leads to the dipole should be soldered. Where a very long lead-in is required, a twisted pair wire allows too much signal loss and in such cases an installer will find the use of a coaxial cable lead-in is preferable.

Whenever possible the dipole should be erected in line of sight with the transmitter or relay station and when this is not possible, the installer will have to secure his fix point by revolving the dipole to the position which picks the strongest signal.

Usually the following dipole installation procedure is used: Erect the dipole brackets at the spot chosen as being most suitable, affix the horizontal rods, turn these until their plane is at right angles with the location of the transmitter. In the house adjust the receiver to produce a picture or bring in the sound program. Then return to the antenna and make final adjustments for greatest signal strength. Two men will be needed for most installations—one on the roof—the other man being at the receiver's controls.

Positioning Television Sets

Television receivers should be located in a room so that direct glare

from either natural or artificial light does not fall upon the face of the cathode-ray tube or television reflector screen. The proper position of a television set in any given room can lend much to the satisfactory performance of the receiver and every effort should be made to give this detail great consideration with the set owner's cooperation.

"Ghosts"

Television pictures that appear to be slightly duplicated or displaced, may be said to suffer from "ghosts." This in effect is usually due to the antenna picking up the main signal and also reflected signals, and the installers job is to eliminate the secondary signals in order to get rid of the ghosts. The installer must slant or rotate the dipole antenna, or he must use a reflector or

reflectors to eliminate secondary signals. If, after all possible positions have been tried, the set continues to have ghosts, it will be necessary to change the antenna location.

Directional Effects

If the receiver is being installed at a point quite a distance from the transmitter, or if the signal level is very low due to local conditions, it is advisable to use a reflector behind the dipole. A reflector is nothing more or less than another dipole antenna placed parallel to the receiving antenna, about 5 feet in back of it. The reflector simply absorbs signals coming from the back of the dipole and cancels them out, thus helping to eliminate ghosts. *Figure 2* shows a simple dipole with reflector. Note the reflector is not hooked to a lead-in.

MORE BUSINESS with detailed orders

WHEN a customer brings a radio to Schreurs Radio Store, Muscatine, Iowa, Clifford Schreurs uses a special repair order which helps to speed the job along.

In making out the order he asks the customer a number of questions, such as "Is radio, dead, weak, noisy, intermittent, bad tones, hums?" When the customer answers Mr. Schreurs has a record of what the customer has noticed about the set. This is often valuable in saving time in repairing the set. It also helps in diagnosing the trouble, so he can give the customer a rough idea of what is wrong.

Another part of the repair order is devoted to a listing of what work the firm does on the set. This has also proved very valuable, reports Mr. Schreurs, for it tells the customer specifically what was done to his radio. Customers are not as familiar with their radio sets as they are with automobiles, and they like to know for what they are spending their repair money.

Schreurs repair order lists all these items, including labor and pickup. Because all this information is printed on the repair order, it also saves Mr.

REPAIR ORDER
SCHREURS RADIO STORE
CLIFFORD A. SCHREURS
229 E. 2nd St. Phone 243

Name.....

Address.....

Make or Model.....

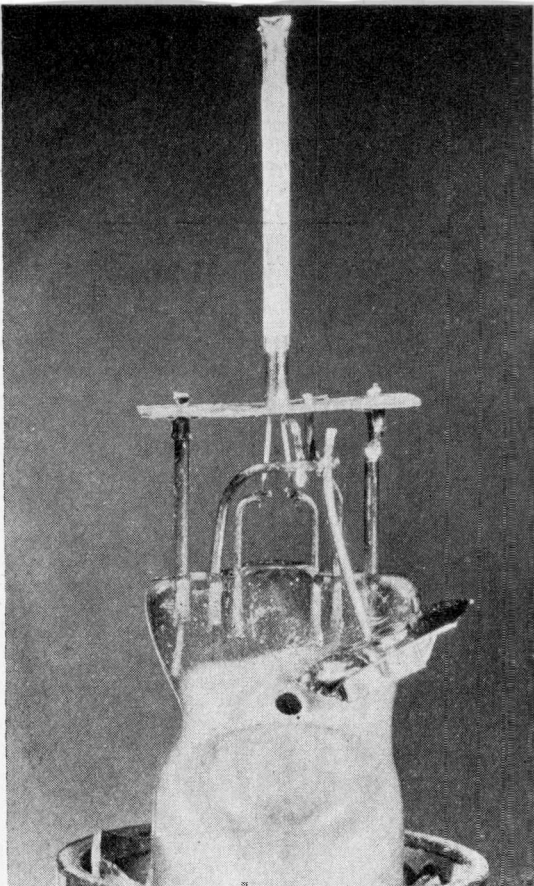
Date.....

IS RADIO - - Dead Weak Noisy
Intermittent Bad Tone Hums

Tubes	_____
Filter Condenser	_____
Bypass "	_____
Coupling "	_____
Resistors	_____
Volume Control and Switch	_____
Alignment - Calibrate Dial	_____
Transformer	_____
Dial Lights	_____
Pick-up and Delivery	_____
Labor	_____
Hours Tested	_____
Service Call	_____
	Tax _____
	Total _____

ALL WORK GUARANTEED

Schreurs much extra labor in writing out each order.



Heart of an electron tube. Closeup of filament and cathode assembly.

SERVICE MARKET in Industrial Electronics

INDUSTRIAL Electronics is simply a term applied to the non-communications branches of electronics which find use in industrial applications.

Such devices as Electronic Welding Controls, Spectrophotometers, Rivet Detonators, Motor Controls, Safety Devices, Induction and Dielectric Heating Devices, etc., are all within the field that the radio serviceman logically falls heir to due to his previous training in the communications branches of Electronics.

He will profit from that legacy only if he adds to his radio knowledge that extra knowledge required of electron tubes and associated circuits. In further conjunction with that knowledge he must glean an understanding of many basic operations that can be accomplished by electronics so as to know what a piece of equipment is expected to do and the limitations im-

Radio servicemen located in industrial sections have within their "service areas" an ever increasing field of repair and maintenance business in the expanding field of industrial electronics.

by OSCAR E. CARLSON

E.S.M.W.T. Instructor, Temple University

posed upon it by the demands of the particular operation.

New Terminology

In the industrial electronic field many new names for otherwise familiar items will be encountered. We are well acquainted with such electron

tube terminology as diode, triode, tetrode, pentode, etc. In this new field you will encounter such terms as Phanotron, Pliotron, Thyatron, Ignitron, etc. The first three are simply patented trade names. A phanotron is a gas filled diode, the pliotron being the name given to the triode, and the

thyatron is a gas filled triode or tetrode. The ignitron is a special type of mercury pool rectifier. That is not as mysterious a group as the names would imply.

How They Developed

To better understand some of the Industrial Electron Tubes let us agree that by definition a so-called "vacuum tube" is only a special form of an "electron tube".

A conventional "vacuum diode" consists of a filament, or heater, and a plate, or anode. There may also be an indirectly heated cathode or the filament may, itself, be the electron emitter. For half wave power rectification the simple diode may be connected as in Fig. 1.

An ideal rectifier would offer zero resistance to current flow in one direction and infinite resistance to current flow in the opposing direction. The vacuum tube rectifier of Fig. 1, using a vacuum diode, or *Kenotron*, is not such an ideal rectifier.

The circuit of Fig. 1 offers a nearly infinite resistance to current flow when the plate, or anode, of the tube is negative with respect to the filament, or emitter. But it does not offer zero resistance to the flow of current when the plate is positive with respect to the filament, or emitter. This is the so-called conduction period. Since the tube does not offer zero resistance we will have a voltage distribution as shown in Fig. 2.

R_t of that figure represents the resistance offered to current flow by the tube on the conduction cycle. The voltage drop, E_t , across the tube varies with the current, I , to some extent and may be as high as 50 volts or so in low voltage rectifier circuits. This is of no particular consequence where the load on the rectifier is constant and of such nature that the current value is small. This resistance is usually several hundred ohms and thus there is considerable power to be dissipated

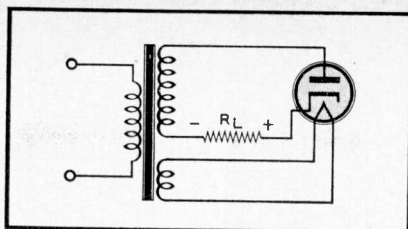
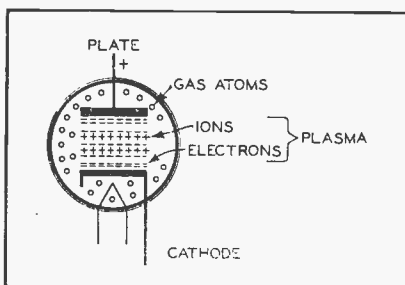


Figure 1. Half wave rectifier circuit without filter circuit.

Figure 3 (below). Conditions within a gas filled diode with filament voltage and positive plate voltage applied.



within the tube. This power dissipation places limits on the tube current handling capabilities for a given physical size. It also requires the power transformer to deliver that much extra power which is to be wasted as heat dissipation within the tube.

If this IR drop across the tube is lowered, and consequently the power, a smaller power transformer may be used, and the entire unit will operate with a lower temperature rise when supplying the same useful output power. To decrease this IR drop we make use of the gas filled diode, or *Phanotron*.

The Phanotron

If we construct a diode type tube and after evacuation of the air introduce into the envelope an inert gas such as argon, we will have a very special diode. The molecules of the inert gas will, if introduced to sufficient pressure, now allow for an entirely different operation than did the

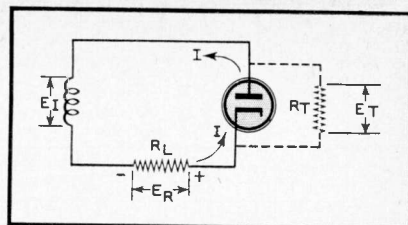
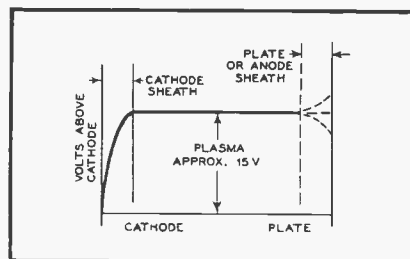


Figure 2. Voltage and current distribution for Fig. 1. E_R cannot equal E_I due to E_T across rectifier tube.

Figure 4 (below). Plasma voltage gradient for Phanotron.

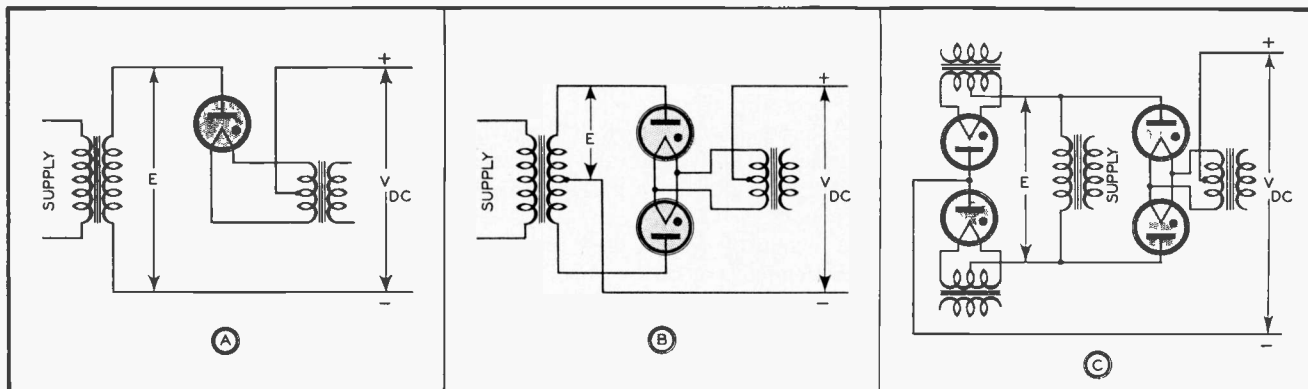


vacuum diode.

Upon application of filament power and positive plate potential to such a diode the emitted electrons leave the cathode with some initial velocity. Surrounding the cathode are millions of atoms of the inert gas. Each electron has a mass of 9×10^{-28} gram or about 1/1840 that of a single hydrogen atom. Each atom of the inert gas in our *Phanotron* contains electrons. The negatively charged electrons in leaving the cathode at high velocity collide with the neutral atoms of the inert gas. Such collisions cause electrons to be displaced from their orbit in their respective atoms so that there are now present in the area between cathode and plate more electrons in free motion than the number emitted from the cathode.

The atoms which lost electrons, having been neutral, now become positive due to the electron deficiency. Such positive atoms are termed IONS and the above process is termed *ion-*

Figure 5. Typical rectifier circuits using *Phanotron* tubes. Note the dot within the tube envelopes symbolizing a gas filled tube. "A", single phase half wave. "B", single phase full wave. "C", single phase full bridge.



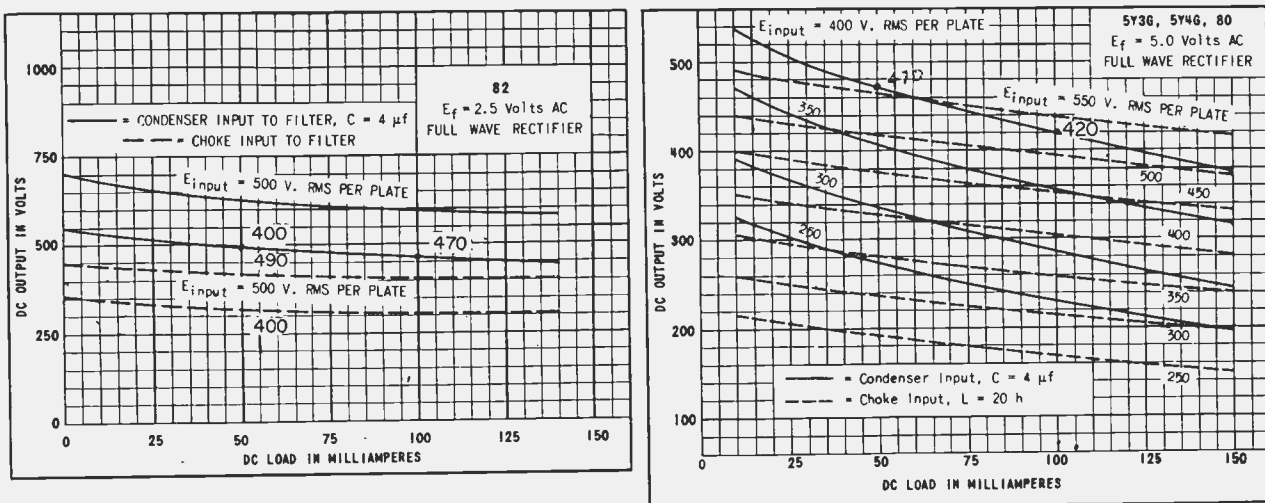


Figure 6. Left, operation characteristics of the Type 82 full-wave rectifier. Right, operation characteristics of the Types 5Y3G, 5Y4G and 80 vacuum diode full wave rectifiers.

ization. Thus when the plate of such a tube is positive with respect to cathode the free electrons in the area between plate and cathode are attracted toward the plate.

The positive ions now come under the influence of the negative cathode and are attracted toward it and the space of electrons around it constituting the space charge of the tube. Here the free electrons of the space charge combine with the ions thus decreasing the effect of the the space charge so that cathode emission is increased. This is equally true for our vacuum diode where the filament emission is limited to a large extent by space charge. Due now to the increased emission more electrons are present to cause more ionization and thus more electrons are released to reach the plate when that is positive with respect to the cathode.

The effect of this gas filled diode is then such as to counteract the effect of the space charge so that the plate current flow depends now on:

1. maximum cathode emission capability
2. the load imposed on the rectifier
3. applied a.c. potential.

The voltage drop across the tube will then be fairly constant and independent of load variations within certain limits. This voltage drop in a gas filled tube is usually between 15 to 25 volts.

Fig. 3 illustrates the conditions within a gas filled diode, or phanotron. In the area between plate and cathode not adjacent to either is nearly an equal number of ions and free electrons called the *PLASMA*. Adjacent to both cathode and plate will

be the electrons entering or leaving the plasma. These areas are called the *SHEATHS* and are illustrated in Fig. 4 which shows the plasma voltage, or potential, gradient for such a tube.

If the applied plate potential is less than about 8 volts positive the above mentioned ionization does not take place and the electrons emitted from the cathode are slowed down by their collisions with the gas atoms. The electron velocity without the added velocity imparted by a higher plate to cathode voltage than 8 volts is insufficient to cause electrons to leave the orbits of their respective atoms.

Time is involved in the ionization and plasma buildup. This time is on the order of one hundredth-thousandth of a second. Such a time interval is unimportant at commercial powerline frequencies but restrict the range of frequencies over which such a rectifier may be used. Furthermore, a larger time is involved in the deionization at the end of each conduction cycle when the plate to cathode voltage falls below the ionization value and then the conduction level and reverses polarity. This time interval is on the order of one thousandth of a second.

You will remember that we have stated that the gas is to be introduced to a certain pressure. This pressure must be kept within certain limits for satisfactory operation and is rather easily done with such gases as argon or xenon.

A group of widely used phanotron tubes employ mercury vapor as the gas. In such tubes liquid mercury is placed in the tube and the heat provided by the filament is such as to allow vaporization in the otherwise

evacuated container, or envelope, of the tube. In such tubes it is imperative that the filament be turned on for several seconds prior to application of plate potential to allow the proper required temperature rise. Time delay relays are used to provide such a delay in most commercial power supplies using such tubes. In the mercury vapor tube the operating voltage drop may vary from 5 to 20 volts.

The schematic symbolization of a gas filled rectifier tube is as shown in Fig. 5 together with typical rectifier circuits for such tubes.

We have seen that the gas filled diode offers the advantage of a nearly constant tube voltage drop over a wide range of load current variation. Figure 6 shows the operation characteristics for the 5Y3G, 5Y4G, and 80 vacuum diode and also for the type 82 mercury vapor diode. These tubes are all dual diodes for full wave rectifier circuit. It is seen from these characteristics that with condenser input filter and 400 volts per plate R.M.S., a.c. voltage the type 82 has a 20 volt variation in d.c. output voltage over a load shift from 50 to 100 milliamperes. The type 80 and other vacuum diodes illustrated in Fig. 6 have a 50 volt d.c. output voltage variation for the same load excursion. Thus we see that the use of the mercury vapor rectifier allows a much better output voltage regulation than does the vacuum diode.

In the second article of this series we will further discuss the Phanotron and introduce the Thyatron, one of the most important of the Industrial Electron Tubes.

SPRAGUE TRADING POST

A FREE Buy-Exchange-Sell Service for Radio Men



READ WHAT THESE SERVICEMEN SAY!

"I received replies from all over the country from my Trading Post ad . . . I'm sure that many others, like myself, will use your products solely . . . Certainly this is the least we can do in repayment for the swell service rendered us." H.T., New York City.

"I'll never forget the favor you did for me through the Sprague Trading Post!" A.L., Salem, Ill.

"The results were terrific! I'll not forget Sprague's 100% service." B.R.S., Ohio.

"This service of yours should and will keep Sprague in the minds of all radio men after the war!" C.J.S., New York

"Thank you again — and be assured I'll not forget this favor when making my purchases!" L.G., Miss.

"Thank you for running my ad. When I return to business from the war, you can count on me to use Spragues as usual!" H.H.P., Wisconsin.

"I couldn't name another service that benefits the radio trade at this time like your Sprague Trading Post." F.M.M., Kans.

FOR SALE—Superior 1200 V-O-M. Olin Stevens, Navy F.P.O. New York, N. Y.

WANTED — Phonograph motor, crystal pickup; also 2—25L6; 1 ea. 6C5, L42B and 25Z5 tubes. T/Sgt James A. Smith, Communications Chief, 617th Bombardment Sq., 477th Composit Group, Codman Field, Fort Knox, Ky.

FOR SALE—Superior signal generator #1230 with operating sheet, schematic and test leads. Chas. Becker, 1350 E. 18th St., Brooklyn 30, N. Y.

WANTED—K & E #XM, case to fit a Log-Log Duplex type slide rule and magnifier. Will pay cash or trade hard to get tubes. J. Kishiyama, 3305-A, Newell, Calif.

WILL TRADE—2 sets matched carrier current transmission coils. Variable condensers tune 20 kc. lower and 100 kc. higher at 310 kc. Output coils have windings for connection to power lines. Circuit included. Covers distances of 5 miles or more without radiation. License not necessary. Need 12" spkr. Phono motor or? Irvin Jay Gordon A.R.T. 3/c Electronics Test U.S.N.A.T.C. Patuxent River, Md.

WANTED—Plans, diagrams or blueprints for Testa-Oudin coils or other high frequency apparatus. Erik Pederson, 112 Third Ave., N. Saskatoon, Sask. Canada.

FOR SALE—New Jensen-Capehart M20—14" auditorium speaker \$35; 12" special high fidelity \$20; G-E JFM 90 FM tuner, cabinet \$50; 30 watt high fidelity amplifier, three channels, \$40; and Stromberg 30-watt portable, \$45. J. Cooper, 445 E. Grand Blvd., Detroit 7, Mich.

SELL OR TRADE—Abbott DK-2, 2½ meter transceiver with a-c "B" supply. Want communication and test apparatus and latest pre-war edition of amateur call book. Morton Bardfield, 4 Brinsley St., Dorchester 21, Mass.

FOR SALE—Hallcrafters SX25; and Motorola F.M. tuner. Bob Blaney, 51 Summit Ave., Brookline 46, Mass.

WANTED—FM tuner or receiver. Describe fully. Harry H. Gingrich, 4613 Derry St., Harrisburg, Pa.

FOR SALE—Superior #1280 tube and multimeter; \$35; Supreme deluxe sig. gen. model #570, \$30; Firestone Roamer portable radio #5-7397-2 less batteries \$25; and 57 used tubes; also 141 new tubes \$130 for lot. Walter's Radio Service, 1252 Pulaski av., Shamokin, Pa.

WILL TRADE—Hallcrafters S20R. Want Kodak "35" 13.5 with cpd r.f. or equivalent. Lt. Alvin E. Lake, Jr., 51st SAW Det., Camp Pinedale, Fresno, Calif.

WANTED—Dimensions, wire size, etc. of coil for 365 mmfd condenser & type 76 tube used as regenerative, grid-leak detector. Roger L. Boyell, 1814 S.W. 22nd ave., Miami 35, Fla.

URGENTLY NEEDED — Hallcrafters SX28A, SX25 or S29. Cash. Cpl. Roger D. Buckingham, Sqd. T-4-B, Gowen Field, Boise, Idaho.

FOR SALE OR TRADE—1 ea. following tubes, 30, 32, 19, 34, 1A8, 6SF5, 6X5, 6SK7, 6C5, 6J5, 6H6, 6V8, 6N7, 02A. Forest Hill Electric Shop, 176 Bloomfield Ave., Newark, N. J.

FOR SALE — Brand new Hallcrafters S-20R receiver. Need 35 and 50 volt tubes. Carl Harper, Elk City, Okla.

WANTED—Complete remote control head for 1936 Ford V8 with cables, housing and fittings for Philco auto radio F-1442. Richard Wolf, Box 49, Route 2, Wishek, N. Dak.

FOR SALE—Mac speed key with switch, \$7.50. Raymond Karol, 99 Stanton St., Wilkes-Barre, Pa.

WANTED—G-T type tubes and radio servicing ept. Joseph Ruzicka, 924—17th Ave., S.E., Cedar Rapids, Iowa.

FOR SALE—Superior emission type tube tester. Has all modern features including condenser test. \$35. Morris Gilfand, 811 N.W. 20th Ave., Miami 35, Fla.

WANTED — Echophone EC-1. Cash. Charlie Price, 318 South Pine St., Little Rock, Ark.

WILL TRADE—N.R.I. tester, sig. gen. and 3 other kits. Want record player with amplifier or amplifier for P.A. use or what have you? Dale A. Hahn, 224 N. 20th St., East Moline, Ill.

FOR SALE OR TRADE—Universal output transformers, midget inputs and tubes. Need other type tubes and supplies. What have you? Edward Howell, Dillon, S. C.

SALE OR TRADE—Home talkie recording kit and 4, 5, 6 tube a-c table radios. Want 1/5-1/3 hp condensing units; G-E FG-17 Thyatron tube and television kit. Larry Otis, 628 Firestone Blvd., Norwalk 1, Calif.

WANTED—Sprague deluxe Tel-Ohmike in good condition. Vernon E. Hurd, 129 North St., Gloversville, N. Y.

FOR SALE OR TRADE—Superior #1280 tube and set tester and sig. gen. Want Sky Champion, Echophone EC-2, Howard or camera. Also have new hard-to-get type tubes to trade. E. Marquez, W. 123, Olive View, Calif.

WANTED—Complete set Rider's. L. W. Thomsen, 46 Ledge Lane, Stamford, Conn.

FOR SALE—Hallcrafters SX-32 receiver complete with PM-23 speaker and cabinet. A-1 condition. James E. Studebaker, % WSAV, Savannah, Ga.

FOR SALE—Latest editions popular radio books, send for list and prices. R. L. Bernard, 392 W. Parker St., Waterloo, Iowa.

URGENTLY NEEDED—Rider's 1, 2 and 7 and operating instructions manual for Hickok oscillograph RF04. A. B. Ziegler, 1911 Cedar St., La Grande, Ore.

FOR SALE—New tubes, send for list. Want 12" P.M. speaker with 7 lb. magnets. Lew Wollaston Radio Service, 1111 Grand Ave., Alliance, Nebr.

SELL OR TRADE—RTL counter model "R" tube tester rebuilt for all tubes, noise and short tests with complete data charts. Sbarpe's Radio Service, 26 Public Square, Milan, Ohio.

WANTED—Signal tracer ohmmeter, ear phones and tube checker with instructions. Robert Bolds, 909 Twenty third St., Ogden, Utah.

FOR SALE—Six tube short wave and broadcast communications receiver complete \$18. Armin Vogt, Plymouth, Nebr.

WANTED—Hickok sig. gen. with crystal and output meter. P. Calabrese, 725 Elton ave., Bronx 55, N. Y.

FOR SALE—Abbott TR4 2½ meter transmitter-receiver with tubes and a-c power supply, \$65. Cliff Kindt, Danville, Pa.

URGENTLY NEEDED—Triplet 3" 0-1 d-c ma. meter and Stancor P-6131 or equivalent vibrator transformer. Homer Remsburg, 1802 Cleveland, Caldwell, Idaho.

FOR SALE—Bendix Dynamoter with radio filter 24v. 4 amp. input, 425v. 163 amp. output, \$12.50; Pioneer gene-motor 18v. input, \$8.50; few instruments & cathode ray tube. Charles Picart, 733—13th St., San Diego 2, Calif.

WANTED—Auto. changer, table model or portable; sig. gen; V.T.V.M.; tube checker; V-O-M meters; amplifiers; pickups; phono motors; lingo language records; Hallcrafters S-20R. C. J. Seymour, Los Angeles Sanatorium, Duarte, Calif.

FOR SALE—Triplet 1175A tester; Readrite analyzer #720-A and tube checker #430; transmitter and receiver PF-6; 1941 Supreme diagrams; RCA 1931-32-33 Victor Service Notes and Riders' III and VIII. C. B. Faulhaber, Box 401, Burns, Ore.

WANTED — RCA 3AP1/906-PI cathode ray tube. Richard Donze, 1160 Manor S.W., Canton 4, Ohio.

—YOUR OWN AD RUN FREE!

During the past three years, over 9,000 buy-trade-sell advertisements have been run free of charge in The Sprague Trading Post — and as long as the need exists this unique service to members of the radio profession will be continued. Send your ad today. Confine it to scarce radio materials. WRITE CAREFULLY or print. Hold it to 40 words or less. Sprague, of course reserves the right to rewrite ads as necessary, or to reject those which do not fit in with the spirit of this service.

HARRY KALKER, Sales Manager

Dept. RSD-105, SPRAGUE PRODUCTS CO., North Adams, Mass.

Jobbing distributing organization for products of the Sprague Electric Co.



SPRAGUE CONDENSERS KOOLOHM RESISTORS

T.M. REGISTERED U. S. PATENT OFFICE

Obviously, Sprague cannot assume any responsibility, or guarantee goods, services, etc., which might be exchanged through the above advertisements

CIRCUIT COURT

Each month we present in this department discussions of new or unusual circuits employed in modern radio receivers, to help simplify your servicing problems.

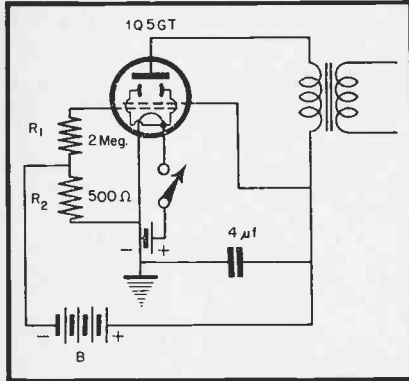


Figure 1

C BIAS IN BATTERY-OPERATED RECEIVERS

Many service-dealers seldom get a battery-operated receiver in for servicing and therefore may wonder just how C bias is obtained without using a C battery. A method which is now quite commonly employed is illustrated in Fig. 1. Note that the B minus terminal returns to the negative terminal of the A battery through the resistor R2, in the grid circuit of the 1Q5GT. Thus all the plate current of this tube must return to the filament by way of R2. In so doing, a voltage drop results which is of the right polarity to supply a negative bias to the output tube grid.

The diagram shown represents the circuit employed in the Espey Model 040, but other makes of sets utilize similar circuits.

UNIQUE TONE CONTROL CIRCUITS

The ordinary tone control consists, of course, of a condenser and variable resistor, usually installed in the grid circuit of the power tube. Usually these components have no other job to perform. But in several General Electric models the tone control also does duty as a grid resistor. In the circuit shown in Fig. 2, which is utilized in the Models LC 619W and LC 648W, the potentiometer R2 serves also as the grid leak for the output tube. Because the output tube is a beam power type, the 1000-ohm resistor R1 is also included in series with the grid. Beam power tubes frequently show a disposition to fly into oscillation at the slightest provocation and R1 serves to suppress this tendency.

Occasionally it is found that the tone control has been placed in the plate circuit of the output tube. An example is shown in Fig. 3, which illustrates the circuit used in the Wholesale Radio Service Company's Model C117, Series B chassis. The tone control is composed of resistors R1, R2, and condenser C1. The purpose of R1 is to limit the tone control action so that when the moving arm of R2 is all the way down to ground,

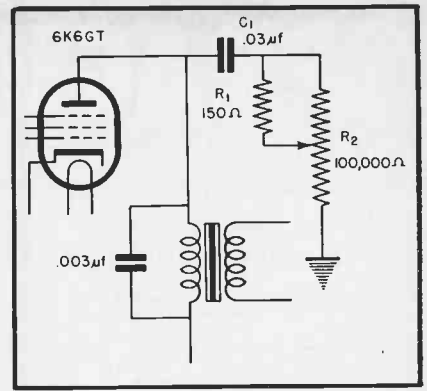


Figure 3

there will still be some resistance in the circuit.

Switches are frequently used as substitutes for potentiometers when only a few steps of tone control are required. The simplest of all methods, but which supplies only a single degree of adjustment, is shown in Fig. 4. This circuit, which is used in the Emerson Model BH-203, BH chassis, employs only the switch S1 and the condenser C1. When S1 is closed, a portion of the higher frequencies is by-passed across the pri-

Figure 2

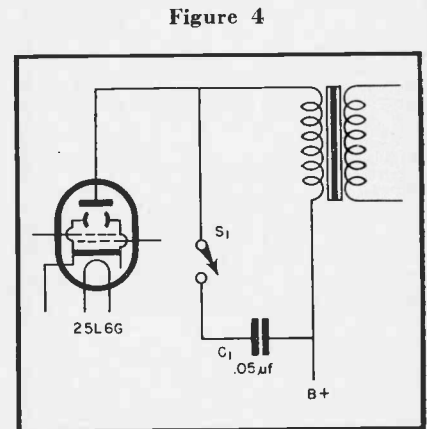
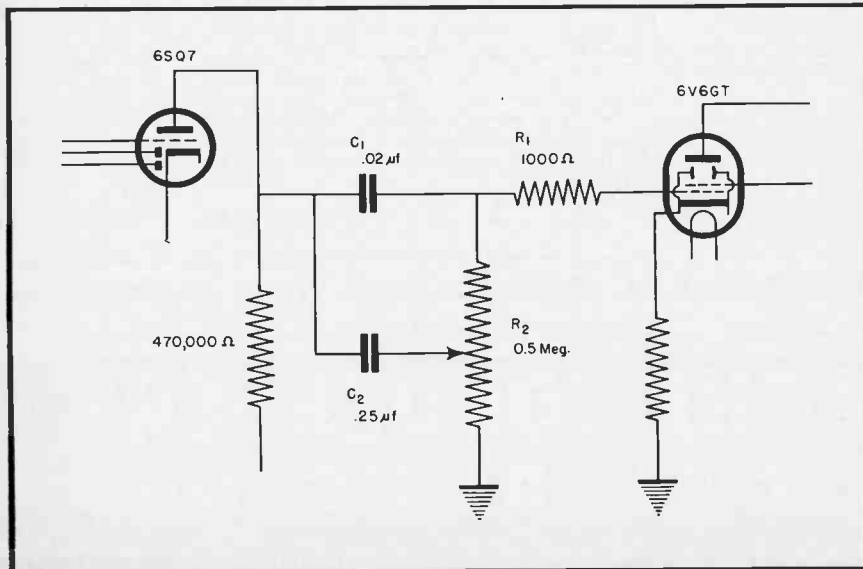


Figure 4

mary of the output transformer and a semblance of increased bass response is obtained.

MODERN FILTER CIRCUITS

Most of us have gotten into the habit of thinking that all that is necessary in replacing an output transformer is to make sure that it is designed to work out of the same type of tube and into the same voice coil resistance as the transformer which it is to replace. In a good many receivers, it will be found that something new has been added. General Electric, RCA, Sentinel, and others are now using in many models output transformers with tapped primaries which also do duty as a portion of the power supply filter circuit.

In Fig. 5, for example, note that the lead from the cathode of the rectifier tube goes to the tap on the primary of

[Continued on page 58]

G. I. Loans

[from page 39]

interest payment by the government is worth \$80 to the veteran if the full four percent interest is charged. Thereafter, the veteran will pay interest on the full amount.

How Lenders Operate

The first hurdle the veteran must make in floating a loan is to convince the bank or other lending agency that he is a good business risk. The veteran must remember at the outset—and it cannot be stressed too many times—that this loan is not a gift in any sense. He must be prepared to give credit references. While lenders generally may show extreme sympathy for the veteran-borrower, the latter must keep constantly in mind that the lender has much to lose, little to gain. The lender must assure himself, on behalf of his depositors — many of whom are also veterans — that the prospective borrower stands a good chance to succeed.

The banker will want to probe impersonally into the veteran's background to find out what experience he has had in the business in which he proposes to engage. His reputation for integrity in the community may be a determining factor in granting a loan, other circumstances considered. An unbroken record for meeting financial obligations will weigh in the veteran's favor. Known bad habits can count heavily against the veteran.

As for experience, let's amplify that point a little. This seems to be the key to the rejection of many applications. A veteran who, in civilian life had always been a bookkeeper without any merchandising background, might be expected to have scant chance of getting a loan to start an electrical equipment store. If, however, the veteran had worked as an employee in such a business before entering service, his chances for getting a loan would be enhanced. If he had managed such a business on salary so much the better. And, if he has that good financial record already mentioned and had previously operated such a successful venture, the loan might almost be certain of being approved.

If the lender approves of a loan to a veteran, he then forwards the application to the nearest Veterans Administration office which, first of all, will check the veteran's eligibility on the basis of his service. Then the administration will check it in the light of

[Continued on page 60]



\$5

Don't confuse A. A. Ghirardi's 3rd Edition **RADIO TROUBLE-SHOOTER'S HANDBOOK** with books on servicing theory! It simply isn't that kind. You don't study the **HANDBOOK!** You just look up the Make, Model, and Trouble Symptom of the Radio to be repaired — and go to work!

TELLS EXACTLY WHAT TO DO!

Clear instructions tell exactly what the trouble is likely to be — **EXACTLY** how to fix it. This big, 4 pound, 744-page manual brings you quick, specific repair data for every radio in use — over 4,800 models of Home and Auto Radio receivers and Automatic Record Changers of 202 manufacturers! Pays for itself the first time you use it. In

addition, there are hundreds of pages of repair charts, data on tuning alignment, transformer troubles, tube and parts substitutions, etc. etc. — all indexed for quick easy reference.

WE'LL PROVE IT

The **HANDBOOK** is the ideal book for training new helpers, repairing either cheap or expensive sets profitably, substituting tubes and parts accurately, eliminating useless test time and equipment. Because it helps you fix **TWO SETS IN THE TIME YOU'D NORMALLY TAKE FOR ONE** it's every bit as valuable as another helper in your shop — and we'll prove it. Send for the book now! Let it work for you for 5 full days. If not more than satisfied, return it and we'll refund every cent of your money. Take us up on this offer now!

... and this 1300 Page Book is worth every cent of a **COMPLETE RADIO-ELECTRONIC SERVICING EDUCATION**



Every Conceivable Service Subject!

A. A. Ghirardi's big 1300-page **MODERN RADIO SERVICING** is the finest, most complete instruction book on Radio-Electronic service work for either the novice or the professional Radio - Electronic Serviceman — bar none! Actually, it gives a **COMPLETE MODERN EDUCATION** in truly professional service work that is an Open Sesame to real opportunities in post war Radio-Electronic Service work where the call will be for **TRAINED** men with a **BROAD** knowledge of modern test equipment and testing techniques . . . and not poorly-trained screw-driver mechanics.

**TEST INSTRUMENTS —
TROUBLE-SHOOTING —
REPAIR**

Read from the beginning, it is a complete servicing course from A to Z. Used for reference, it is an invaluable means of "brushing up" on any work that puzzles you. Gives complete information on all essential service instrument types; how they work (with wiring diagrams), how, when, and why to use them; how to build your own; preliminary

trouble checks; circuit and parts analysis; parts repair, re-placement, substitution; obscure troubles; aligning and neutralizing; interference reduction — and **HUNDREDS** of other subjects including **How to Start and Operate a Successful Radio-Electronic Service Business**. 706 illustrations; 720 self-testing review questions. Only \$5 complete (\$5.50 foreign).

MONEY-SAVING OFFER!

Get **BOTH** the Handbook and **Modern Radio Servicing** — radio's most famous complete service library totalling over 2030 pages — at a bargain Combination price. See coupon.

5-DAY MONEY-BACK GUARANTEE

Technical Division, **MURRAY HILL BOOKS, Inc.**, Dept. RSD-105, 232 Madison Avenue, New York 16, N. Y. Enclosed find \$..... for books checked; or [] send C.O.D. (in U.S.A. only) for this amount plus postage. If not fully satisfactory, I may return the books at the end of 5 days and receive my money back.

[] **RADIO TROUBLE-SHOOTER'S HANDBOOK** \$5 (\$5.50 foreign)
[] **MODERN RADIO SERVICING** \$5 (\$5.50 foreign)

[] **MONEY SAVING COMBINATION.** Both books for only \$9.50 (\$10.50 foreign)

Name

Address

City & Dist. No. State

(Please print or write plainly.)

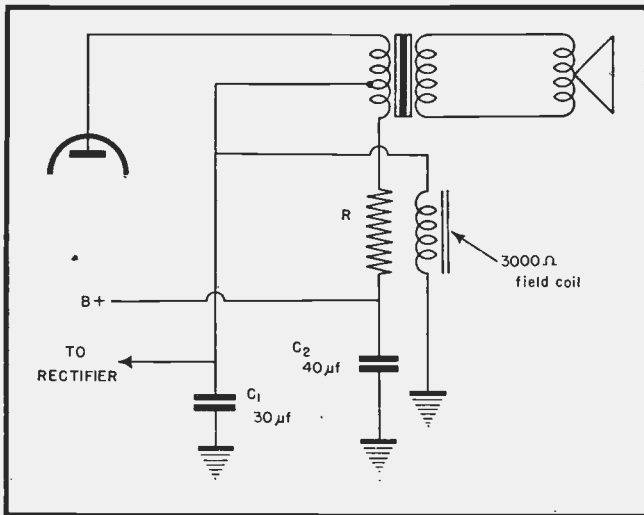


Figure 5

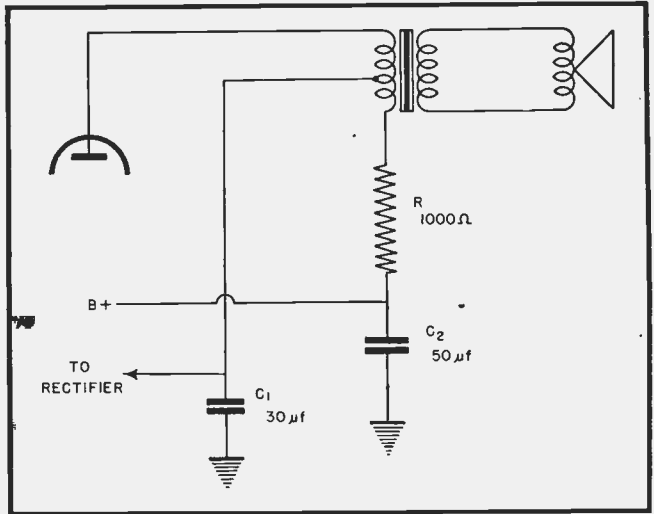


Figure 6

the output transformer, so that this portion of the transformer serves also as a filter choke. The tap is heavily by-passed with the 30-mike condenser C1, which is all the filtering the plate of the power tube receives. For the rest of the set, additional filtering is supplied by the resistor R, which is limited to 1000 or 1500 ohms in order not to cut down the voltage too much, by-passed by the 50-mike condenser C2.

Specific models employing this circuit are General Electric LCP-596, RCA V-105 (using a 1500-ohm resistor), and Western Auto Supply Company D1171, issue B.

The circuit just described is used with sets employing a permanent magnet loud-speaker. When the speaker has a field coil designed to be used as a shunt across the rectifier output, the circuit of Fig. 6 applies. This method is utilized in the Sentinel Model 263 and 264. The 3000-ohm field shunts directly across C1. While C2 is slightly lower in capacity, the rest of the circuit is substantially the same as that used in Fig. 5.

TAPPED CHOKES FOR PUSH-PULL INPUT

Nowadays practically all receivers use push-pull input circuits which employ either a phase inverter or a transformer for the purpose of securing push-pull action. An exception is the tapped choke method used in the General Motors, Cadillac Div., model 7241951, shown in Fig. 7. In this circuit, the center-tapped choke provides proper phase relations for push-pull performance of the 6V6GT output tubes.

This method saves the additional space which would be required for a phase inverter and is less costly than a transformer capable of the same quality of reproduction.

UNUSUAL NEGATIVE FEEDBACK CIRCUIT

In most receivers all connections from the volume control are made in the grid

Figure 8

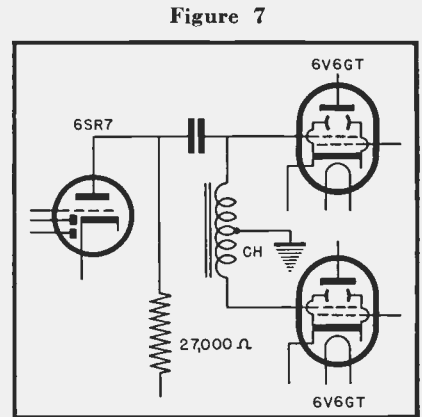
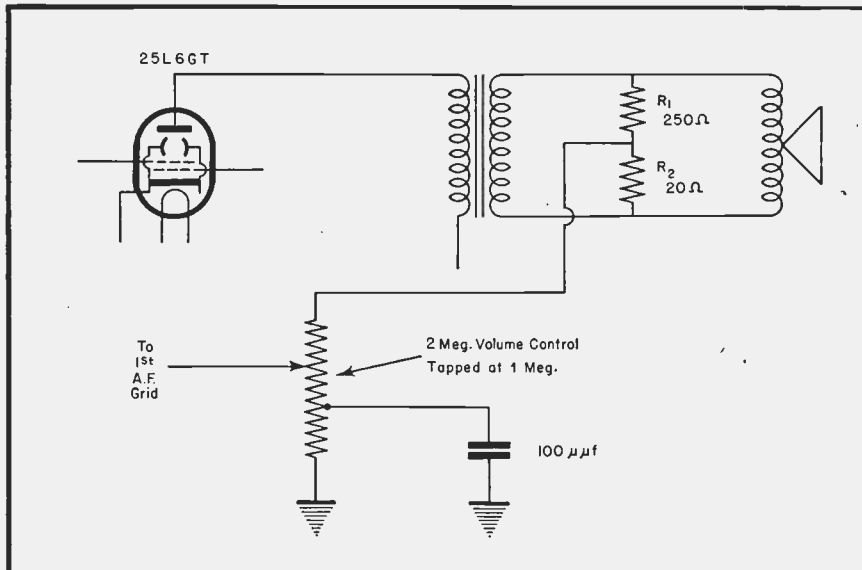


Figure 7

and diode circuits of the detector-first a.f., diode-triode. An exception is the circuit used in the Fada Models 175, 177, 185, and RE-187. As shown in Fig. 8, one terminal of the volume control wends its way back to the output transformer secondary, where it connects at the junction of two resistors, R1 and R2, which serve as a voltage divider. This voltage divider is so proportioned that 2/27ths of the output voltage across the speaker voice coil is fed back into the volume control and thence to the grid of the first a-f tube. When the volume control is at maximum setting, all this feedback voltage is applied to the grid, and the reduction in hum and distortion secured by negative feedback is a maximum. As the volume control setting is reduced, a lesser proportion of the feedback voltage is applied to the first audio grid.

The theory behind this circuit is that hum and distortion are greater on weak signals, and therefore maximum feedback is needed to minimize this distortion. On strong, local signals, not so much feedback is required because the strength of the signal tends to override the residual hum ahead of the detector.

Actually, this circuit is not particularly new, having been presented many years ago, but it has not come into wide use.



Watch for important news
from **Jensen**



Jensen
SPEAKERS WITH

ALNICO 5

FREE to the Armed
Forces, Colleges,
Technical Schools,
Libraries

5 MONOGRAPHS AVAILABLE

1. Loud Speaker Frequency-Response Measurements.
2. Impedance Matching and Power Distribution.
3. Frequency Range in Music Reproduction.
4. Effective Reproduction of Speech.
5. Horn Type Loud Speakers.

25¢ Each

Specialists in Design and Manufacture of Fine Acoustic Equipment

JENSEN RADIO MANUFACTURING COMPANY • 6619 SOUTH LARAMIE AVENUE, CHICAGO 38, ILLINOIS
IN CANADA—COPPER WIRE PRODUCTS, LTD., 137 RONCESVALLES AVENUE, TORONTO

Communications WELL IN HAND



• *Transmitting equipment designed and manufactured by Wilcox Electric Company of Kansas City, Missouri.*

THE inclusion of Astatic's GDN Series Dynamic Microphone in this modern airline dispatching office installation speaks for itself. Present-day communications systems demand the finest possible equipment. Astatic products measure up to these high standards of operating efficiency.

SHOWN in the installation pictured above is a Dynamic, semi-directional, all-purpose Microphone of the Astatic DN Series, mounted on Grip-to-Talk Desk Stand. This stand embodies a relay-operating ON-OFF Switch for remote control of transmitters and amplifiers, the switch itself being operated by a slight pressure of the fingers upon a convenient grip bar.

Astatic Microphones, Phonograph Pickups and Cartridges are going forward daily in an ever-increasing volume to manufacturers of radio, phonograph, communications and public address equipment, and to authorized Astatic jobber outlets.

You'll HEAR MORE
from Astatic

THE
Astatic
ASTATIC CORPORATION
CONNEAUT, OHIO
IN CANADA. CANADIAN ASTATIC LTD., TORONTO, ONTARIO

G. I. Loans

[from page 57]

its risk. If the loan goes through the Administrator will issue a loan guaranty certificate and send it to the lender and the loan will be completed by the lending agency.

Loans Guaranteed

The Administrator is empowered to guarantee a loan for the purchase of any business, land, buildings, supplies, equipment, machinery or tools to be used by an applicant in a gainful occupation if he finds that:

- (a) the loan will be used in the bona fide pursuit of such gainful occupation;
- (b) such property will be useful in and reasonably necessary for the efficient and successful pursuit of such occupation;
- (c) the ability and experience of the veteran indicate that there is a reasonable likelihood that he will be successful;
- (d) the purchase price does not exceed the reasonable value; and
- (e) the loan appears practicable.

Business loans are subject to guarantee by the government if made for one or more of the following fundamental purposes enumerated in the regulations:

- (a) loans for the acquisition of an existing business;
- (b) loans for the purchase of equipment, machinery, or tools;
- (c) loans for the purchase of supplies; and
- (d) loans for the purchase of business realty. Neither the statute nor the regulations cover loans for inventory, stock or working capital.

Buying a Going Business

In buying an already established business, loans will be approved only if the veteran is going to actively participate in the management and direction of the business. This precludes "dummy" set-ups in which a veteran's borrowing power is used to buy a business in which he may be only an inactive participant. Such a business may be operated as an individual proprietorship or as a partnership.

In all instances the purchase of existing businesses must include the transfer of good will. Moreover, as a protection to both buyer and lending agency, in most instances the bill of sale will specifically forbid the seller from engaging in a like business within

[Continued on page 64]

RADIO SERVICE DEALER

KEN-RAD

METAL TUBES



Better Than Ever

Ken-Rad Tubes have played a vital part in bringing about higher standards of home radio reception . . . Now, to tube quality already foremost, are added great new research and engineering facilities . . . Ken-Rad Radio Tubes consequently are *better than ever*, increasing the desirability and profit opportunities of the Ken-Rad sales franchise.

Write for your copy of
"Essential Characteristics"
the most complete digest of tube
information available.

KEN-RAD

DIVISION OF GENERAL ELECTRIC COMPANY

OWENSBORO, KENTUCKY

177-011-9850

In Trade
[from page 29]

RCA District Manager

Harry E. Austin, District Commercial Manager, RCA Communications, Inc., San Francisco, has been appointed District Manager to fill the spot left vacant by the promotion of N. R. Cherrigan to superintendent of Central Radio Office, New York, according to Col. T. H. Mitchell, Vice President and General Manager of the corporation.

OPA Radio Price Approval

The nation's first OPA price approval of a radio set manufactured since the end of the war for civilian use was granted to the John Meck Industries, Plymouth, Indiana, today (September 13). The announcement was made by the Office of Price Administration officials in Washington.

The approval was placed on a miniature five-tube superheterodyne table

model. The retail price established was \$15.95, an approximation of 1942 prices, according to OPA authorities. Percentages allowed for dealers and jobbers were included in the announcement. The set has been in production for several weeks, and will be distributed in volume to dealers throughout the country immediately.

Farnsworth Models Soon

At the annual meeting of stockholders of Farnsworth Television & Radio Corporation held in Fort Wayne, Ind., the following directors were re-elected: Jesse B. McCargar of San Francisco, Chairman of the Board; George Everson of San Francisco; Philo T. Farnsworth of Fryeburg, Me.; Lloyd S. Gilmour of New York City; Burton A. Howe of New York City; E. A. Nicholas of Fort Wayne, and J. F. Wharton of New York City.

Mr. Nicholas, President, told the stockholders that the company's reconversion plans were well under way and that its first postwar radio models are expected to come off the production line by the end of October.

Clean Shops

H. Leslie Hoffman, president of the Hoffman Radio Corp., spoke at the Royal Palms Hotel, Los Angeles, on the September program of the Radio and Electronics Servicemen's Association. He said, in part, that radio servicemen have been fortunate in being able to maintain customer contacts through the war period, and they should be in the best of positions to capitalize on prospect lists because they know who needs a new radio set.

They should become business men, he said, and make up their minds to go to the customer instead of having the customer come to them. By way of concrete suggestions, Mr. Hoffman said that servicemen should clean up their shops, clean themselves up, work out attractive window displays, identify their place of business, select a good line, sell on quality and performance and start selling right now.

Record Changers

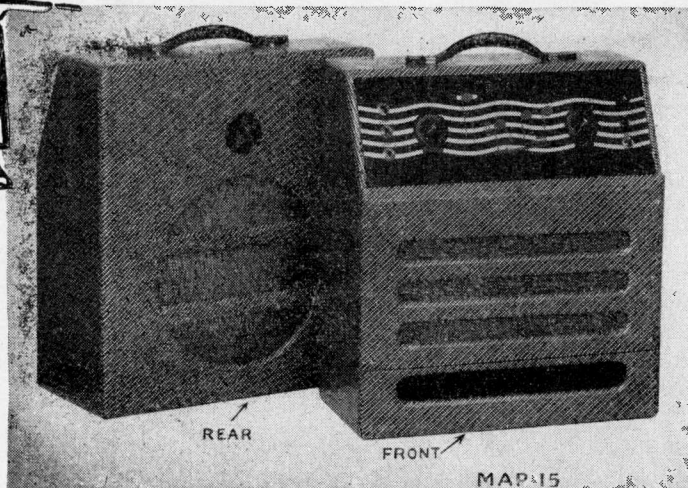
With the long-awaited postwar era now at hand, officials of Webster-Chicago Corporation, Chicago, Illinois, have announced their company's plans for a completely new line of record changers and other phonograph and recording equipment.

Shipments of Model 26 2-post changer are now being made to the trade. Other models will be manufac-

[Continued on page 68]



**Those Who Don't Own Them
WANT THEM!**



**MASCO Musical Instrument Amplifying System
MAP-15...Unsurpassed for True Tonal Reproduction
of Reed, String and Percussion Instruments**

SPECIFICATIONS:

Power Output: 15 Watts.
Controls - Two: Master Volume, Tone.
Switches: On-Off A.C.
Tubes: 2-7F7, 2-6L6GA, 1-5Y3G.
Inputs - Three: One Microphone,
Two Instruments.
Power Consumption: 95 Watts.
Frequency Response: 30 to 12,000 cycles.
Speaker - 12" electro dynamic
Safety Fuse, Pilot Light Indicator.

Three inputs allow for three instruments together or 1 microphone and 2 instruments. Attractive Case. Superb MASCO internal construction.

List price including tubes \$71.25

WRITE FOR CATALOG 45-E

Ask your jobber for full details of this and other Masco Sound Equipment

MARK SIMPSON MANUFACTURING CO.

MANUFACTURERS OF

Masco Sound Systems and Accessories

186-194 WEST FOURTH STREET :: NEW YORK 14, N. Y.

Telephone CHelsea 2-71123-4

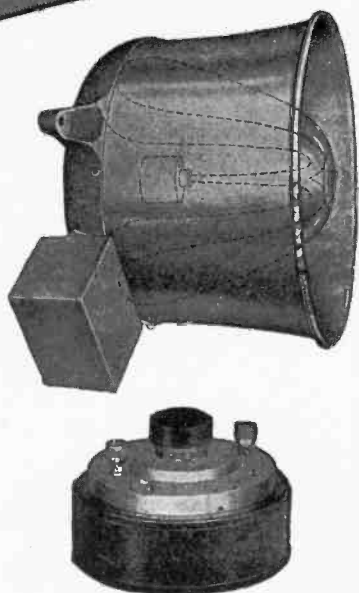


Sun. Mon. Tue. Wed. Thu. Fri. Sat.

					4	5
6						12
13						19
20						26
27	28	29	30	31		

**Every Day, Every
Month, Every Year
RACON SPEAKERS**

**Are Preferred By
Sound Experts**



The RACON Marine Horn Speaker is used both as a loudspeaker and as a microphone. Approved by the U. S. Coast Guard for all emergency loudspeaker systems on ships. A double re-entrant type speaker, completely waterproofed and weatherproof. Ideal for general P.A. and Marine use. Several sizes available. RACON Permanent Magnet Horn Units are available in operating capacities of from 10 to 50 watts.

In judging the value of sound reproduction equipment, the month-after-month, year-after-year dependability and efficiency of loudspeakers are prime considerations along with fidelity, output and initial cost.

RACON has never compromised with quality. RACON Speakers and Driving Units are recognized as the standards by which other loudspeakers are judged. RACONS are used on U. S. Army Transport and Navy vessels — by other branches of the Military — in factories, schools, auditoria, shipyards, etc. RACONS are available for every conceivable application. Specify RACON when planning your next sound or public address installation

RACON ELECTRIC CO., 52 East 19th St., New York, N. Y.

RACON

G. I. Loans

[from page 60]

a stated period of time or within a geographical territory agreed upon between buyer and seller. This requirement will be very closely observed especially in the service trades so far as not in conflict with state laws governing such contracts.

While previously noted that the Act does not provide for loans covering inventory, stock or working capital,

a loan for the purchase of an existing business would cover all assets, not only inventory but working capital. However, loans for the acquisition of additional inventory or for other working capital are not eligible for guaranty.

The ultimate maturity of loans for the purchase of existing businesses may not exceed five years.

Buying Equipment

Loans may be granted for the purchase of new or used equipment, ma-

chinery or tools with a maturity limitation not exceeding three years for the entire purchase price. Or a loan may be made for the initial payment on such items, not in excess of one-third of the purchase price, such loan not to exceed \$1,000. An initial-payment loan may not be in excess of one year if for \$500 or less, or two years if over \$500.

The amount of loans is not restricted to the above amounts, however, where a loan covers the full purchase price.

Miscellaneous Loans

A loan may be granted for the purchase of *supplies* in an amount not in excess of \$1,000 with a maturity of not over one year.

Loans may also be made for the purchase of *business real estate*, land or buildings, or both, to be used by the veteran in pursuing a gainful occupation. Such loans must be amortized, principal and interest, within not more than 20 years.

Generally, veterans' loans will be secured by first liens, although the Veterans Administration recognizes that a certain amount of latitude may be desirable. Supplies, for instance, being expendable, may be unsecured.

Appraisals

Loan applications forwarded to the Veterans Administration must be accompanied by an appraisal of property which the veteran proposes purchasing. This is not only sound banking practice, but it safeguards the financial interest of the borrower.

It may be stated categorically that a loan for purchase of an existing business will be rejected if the purchase price is out of line with the appraised valuation. Owners of existing businesses trying to unload at inflated values upon unwary veterans will find few buyers among ex-servicemen, if the government is asked to guaranty the loan.

Veteran Partners

There is nothing in the statute to prevent two or more veterans going into a partnership and starting a business or buying one already established. Each veteran would be held responsible for his share of the loan, not jointly.

First Mortgage on Bonus

While the overwhelming majority of veterans seeking to go into business will do so in all sincerity, a few may see in the Act a chance to get something for nothing—may even qualify

[Continued on page 66]

BRIGHTER LIGHT for Service Jobs! NEW, IMPROVED

IDEAL Rechargeable Flashlight STORAGE BATTERY

More and more radio servicemen are using IDEAL Rechargeable Storage Batteries for Flashlights because they are sure of a brighter, better light at all times, simply by recharging regularly from any handy electrical outlet. Economical too, one IDEAL battery can replace up to 400 or more dry cells. Fits any standard flashlight case using two or more 1 1/4" size D dry cells. Recent improvements give the IDEAL Storage Battery 40% greater discharge capacity.

IDEAL Battery Charger lasts for years. Available in single, six and twelve gang sizes.

GUARANTEED



Write for Bulletin
BB 345

PROMPT DELIVERY

IDEAL Sycamore

Storage Battery Division

IDEAL COMMUTATOR DRESSER CO.

5104 Park Ave., Sycamore Ill.

Sales offices in all principal cities



**A WAR-TIME DEVELOPMENT
BRINGS US A POST-WAR
ELECTRONIC ACHIEVEMENT!**



THE MODEL CA-11
**SIGNAL
TRACER**

Features:

- **SIMPLE TO OPERATE**—only 1 connecting cable — NO TUNING CONTROLS.
- **HIGHLY SENSITIVE**—uses an improved Vacuum Tube Voltmeter circuit. Tube and resistor-capacity network are built into the Detector Probe.
- **COMPLETELY PORTABLE** — weighs 5 lbs. and measures 5"x6"x7".
- Comparative Signal Intensity readings are indicated directly on the meter as the Detector Probe is moved to follow the Signal from Antenna to Speaker.
- Provision is made for insertion of phones.

Introduced in 1939-1940 Signal Tracing, the "short-cut" method of Radio Servicing became established as the accepted method of localizing the cause of trouble in defective radio receivers. Most of the pre-war testers (including ours) were bulky and required a number of connections before the unit was "set for operation" and included a tuned amplifier which had to be "retuned" to compensate for signal shift.

The new model CA-11 affords all the advantages offered by the pre-war models and only weighs 5 lbs. and measures 5"x6"x7". Always ready for immediate use without the necessity of connecting cables, this amazingly versatile unit has NO TUNING CONTROLS.

Essentially "Signal Tracing" means following the signal in a radio receiver and using the signal itself as a basis of measurement and a means of locating the cause of trouble. In the CA-11 the Detector Probe is used to follow the signal from the antenna to the speaker — with relative signal intensity readings available on the scale of the meter which is calibrated to permit constant comparison of signal intensity as the probe is moved to follow the signal through the various stages.

**NOW AVAILABLE FOR
IMMEDIATE DELIVERY!**

The Model CA-11 comes housed in a beautiful hand-rubbed wooden cabinet. Complete with Probe test leads and instructions.

NET
PRICE

\$1875

Please place your order with your regular radio parts jobber. If your local jobber cannot supply you kindly write for a list of jobbers in your state who do distribute our instruments or send your order directly to us.

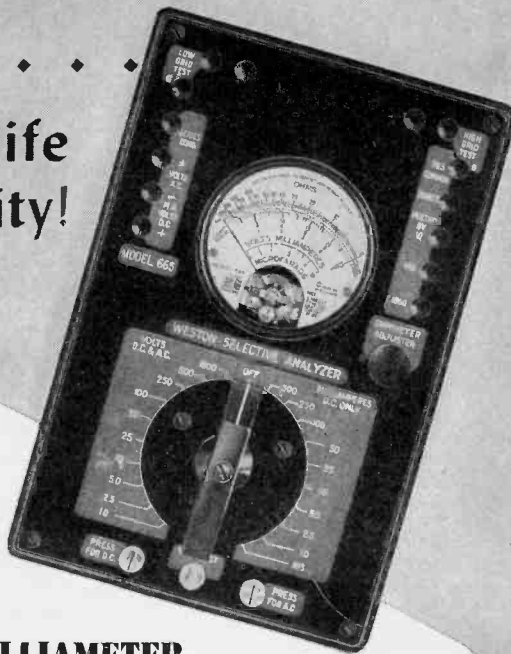
**Superior
INSTRUMENTS CO.**

DEPT. D, 227 FULTON ST., NEW YORK 7, N. Y.



33 well overlapped ranges . . .

plus long-life dependability!



WESTON

(Model 665 Type 1)

VOLT-OHM-MILLIAMETER

Its compactness, versatility and rugged dependability make Model 665 the ideal instrument for use in the field, or in the shop . . . whether servicing communications equipment, testing electrical components in production, or research or maintenance work. Provides 33 AC and DC voltage, DC current, and resistance ranges . . . with simplified switching arrangement for rapid operation. Built to WESTON standards to assure dependable measurement accuracy throughout the years. Full details on request. Weston Electrical Instrument Corporation, 605 Frelinghuysen Avenue, Newark 5, N. J.

WESTON *Instruments*

PRODUCERS of:

- Variable Resistors
- Selector Switches
- Ceramic Capacitors, Fixed and Variable
- Steatite Insulators
- Silver Mica Capacitors

Centralab

Division of GLOBE-UNION INC., Milwaukee

G. I. Loans

[from page 64]

for such loans. The framers of the statute have not overlooked this possibility. Where the borrower defaults on his loan, the government reserves its right to proceed against the debtor in the same manner that a private individual may do. The Administrator is given broad latitude in this respect and may waive collection if the facts indicate the veteran is not at fault in his failure.

On the other hand, the Act provides that, if any bonus or adjusted compensation bill is passed, the defaulted government-guaranteed loan may be satisfied with money due to the veteran from such a bonus up to the amount of the unpaid loan.

How Business Men Can Help

There's hardly a business man who does not have a close friend or relative in service or recently returned. His rich experience can be invaluable to the veteran seeking an entry into business. Both the attitude and the helpfulness of businessmen toward ex-servicemen can go far toward making his readjustment to civilian life either a happy one or one of bitterness and heartache.

He can counsel his veteran friend or relative with sound advice; he can point out the business boobytraps and pitfalls; he can discuss the desirability of various locations; fundamental business principles that may not be safely violated. These and a hundred other things he can tell the veteran. The serviceman will be the richer; the businessman no poorer.

Says the Veterans Administration, in connection with G. I. loans:

"It was the clear intent of Congress that all eligible veterans should have available to them the full benefits of Title III (loans for the Purchase or Construction of Homes, Farms and Business Property). It is the duty and desire of the Administrator of Veterans Affairs to give effect to this intent in such a manner that, while following the provisions of the Act, a minimum of delay or difficulty will be encountered by any applicant. The Administrator feels justified in depending upon the support and whole-hearted cooperation of all who are in any manner connected with home, farm or business financing to the end that this task, which should be undertaken as a privilege, will be so performed as to gratify all concerned."



***In the Frigid Arctic...
or the Steaming Tropics***

THROUGHOUT our service to the Armed Forces, Eastern has always delivered every piece of equipment to the highest Government standards. Now Eastern's wartime "proving ground" is converted to simulate normal *peacetime conditions* in our laboratories, assuring you of

precision, quality and performance.

Every product bearing the Eastern trade mark will conform to the most exacting requirements. The Eastern Amplifier line will include standard items and many exceptional innovations. For complete details, write our Sales Manager, Department 10-C

Buy War Bonds

EASTERN AMPLIFIERS

U. S. Reg'n. Applied For

EASTERN AMPLIFIER CORPORATION
794 EAST 140th STREET • NEW YORK 54, N. Y.

In Trade

[from page 62]

tured as soon as production tooling can be completed. When reconversion from the making of vital war material is accomplished, Webster-Chicago will merchandise a complete line of phonograph and recording equipment to the trade, as well as continuing to serve—as it has previously—set manufacturers.

Zenith Staff

J. J. Nance, vice president of Zenith Radio Corporation, announces the following appointments to Zenith Radio Distributing Corporation, wholly owned subsidiary and exclusive wholesale distributor of Zenith radios and hearing aids in the Chicago area and northern half of Illinois.

General manager: James H. Hickey; sales manager, Charles F. Parsons, Jr.; division manager: Thomas B. Stone.

G-E Radios for Christmas Buying

General Electric radios will be back on the market this fall in time for Christmas buying, according to Paul L. Chamberlain, manager of sales of

the receiver division. The first table model production line is scheduled to start October 1 with others following at approximately one week intervals. Sets will begin appearing in dealers' stores in November. By Christmas it is expected a total of 12 models will be available, including an AC-DC battery portable, a radio phonograph console incorporating the new G.E. electronic reproducing system, and ten table models in cabinets of wood and plastic.

"By the time the Christmas rush is at its height," Mr. Chamberlain said, "we will have been in production almost three months, and should be in a position to supply our dealers with enough merchandise to meet the most urgent of the anticipated radio demand. All of these plans are, of course, contingent upon the availability of materials and components," he explained.

General Electric will devote much of its immediate manufacturing resources to low-priced sets, all of new design and containing some features which were unknown or limited only

to the higher priced sets before the war. "General Electric will begin production of its full radio line early next year," Chamberlain said.

"We plan to start with the more standardized and lower-priced merchandise so as to make available to the public the greatest number of needed radios as soon as possible. The console radio-phonograph combination will be in the medium-price range. This receiver will have seven tubes and two tuning bands. The phonograph will be equipped with an automatic record changer and the recently perfected General Electric electronic reproducer. This system of record playing has been hailed as one of the most outstanding contributions to home entertainment since the application of electronics to the phonograph. It virtually eliminates all chatter, needle radiation and scratch, and gives a new tone balance never achieved in prewar sets."

Side Lines

Norman A. Kevers, chairman of the board of Electronic Laboratories announces that the company had inaugurated a new division to manufacture toys operated by electronic devices. The name of the new division is Elec-

[Continued on page 70]

The New Speed-Chek Tube Tester

MORE FLEXIBLE • FAR FASTER • MORE ACCURATE

Three-position lever switching makes this sensational new model one of the most flexible and speediest of all tube testers. Its multi-purpose test circuit provides for standardized VALUE test; SHORT AND OPEN element test and TRANSCONDUCTANCE comparison test. Large 4" square RED • DOT life-time guaranteed meter.

Simplicity of operation provides for the fastest settings ever developed for practical tube testing. Gives individual control of each tube element.

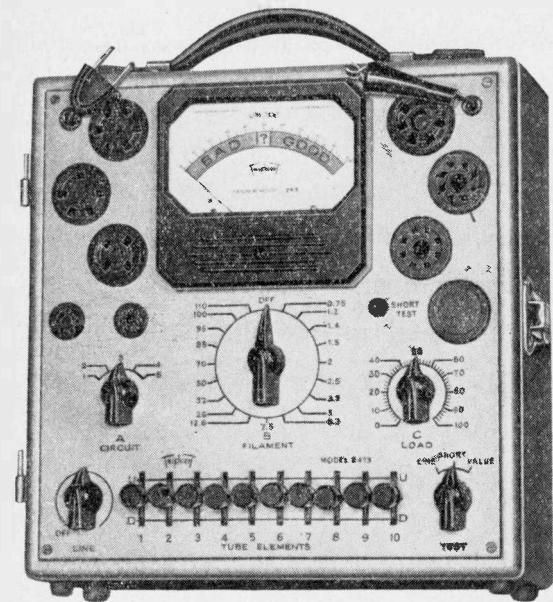
New SQUARE LINE series metal case 10" x 10" x 5½", striking two-tone hammered baked-on enamel finish. Detachable cover. Tube chart 8" x 9" with the simple settings marked in large easy to read type. Attractively priced. Write for details.

Model 2413

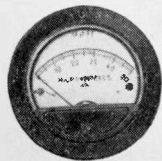
is another member of
the NEW TRIPLETT
Square Line

Additional Features

- Authoritative tests for tube value; shorts, open elements, and transconductance (mutual conductance) comparison for matching tubes.
- Flexible lever-switching gives individual control for each tube element; provides for roaming elements, dual cathode structures, multi-purpose tubes, etc.
- Line voltage adjustment control.
- Filament Voltages, 0.75 to 110 volts, through 19 steps.
- Sockets: One only each kind required socket plus one spare.
- Distinctive appearance makes impressive counter tester.



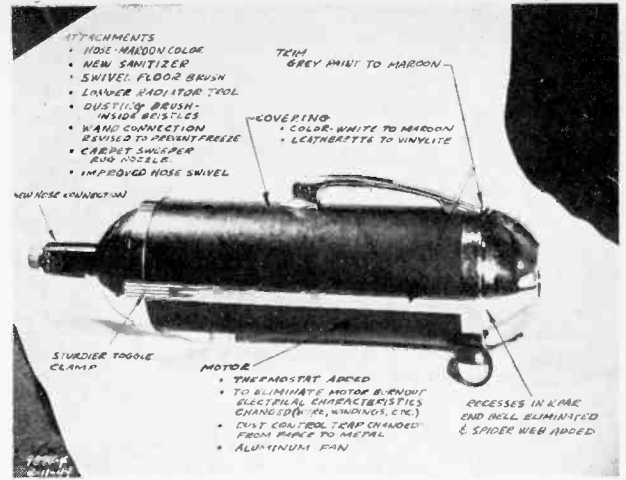
*Precision first
...to last*



Triplet

ELECTRICAL INSTRUMENT CO. BLUFFTON, OHIO





Vacuum Cleaner "Package"

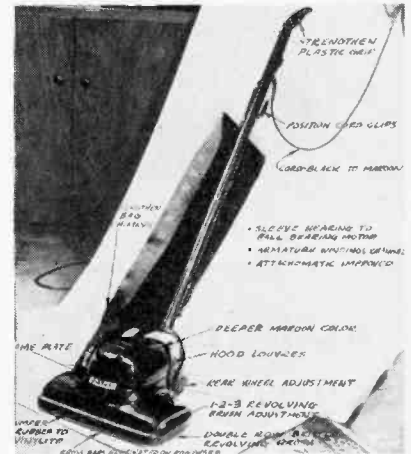
A PREVIEW of the new complete home cleaning system and cordless electric iron and electric garbage disposer, to be produced shortly by Eureka Vacuum Cleaner Company, was presented last month to dealers.

Mr. George Wilkens, Eureka eastern sales manager, presented the home cleaning system.

He announced that Eureka, for the first time, will offer a complete home cleaning system, consisting of an upright vacuum unit (to sell at \$79.50)

for floors, rugs and carpets; a tank-type cleaner (to sell for \$69.50) for furniture, drapes, and other "above the floor" cleaning, and a set of connectible attachments, including a power-driven floor waxer. Both units, complete with attachments will sell for \$149.50.

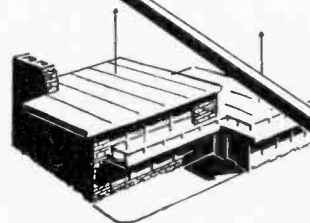
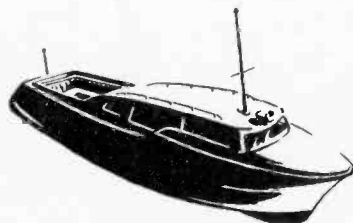
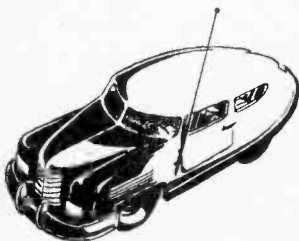
Mr. Hike Newell, Vice President of Geyer, Cornell, & Newell, Eureka's advertising agency, presented the advertising and sales promotion program.



ANTENNAS

SNYDER
MANUFACTURING CO.
22nd & ONTARIO STS., PHILA. 40

MANUFACTURERS • START TO FINISH



AUTOMOBILES

BOATS

HOMES

HANDY-TALKIE

In Trade

[from page 68]

Toy. The company expects to be in production of some items in time for the Christmas market. They plan to manufacture a fluorescent paint chest for youngsters complete with a black light unit to make the colors glow in the dark. They also expect to have ready a small inter-communications two stations system to be plugged in to the regular lighting supply.

Westinghouse Asst. SM

Appointment of W. S. Lefebvre, former western sales manager of the Philco Corporation, as assistant sales manager of the Westinghouse Home Radio Division, Sunbury, Pa., is announced by Harold B. Donley, manager of the division. As a member of the headquarters staff which will direct nationwide sales of home radio and television receivers, Mr. Lefebvre will maintain offices at Sunbury.

Admiral Appliance Manager

L. H. D. Baker, vice president, appliances division, Admiral Corp., Chicago, announces appointment of Harold D. Conklin as Manager of the Appliances Division. Conklin joined Admiral in November, 1944, as Manager of the Electric Range Division. This appointment will bring Conklin into active work on the Dual-Temp and conventional refrigerators, as well as the Electric Range Division of Admiral.

Westinghouse Appoints

Appointment of R. H. McMann, former procurement control director of the Republic Aviation Corporation and a veteran of more than 20 years in the radio receiver merchandising field, as eastern district manager of the home radio division, Westinghouse Electric Corp., is announced at Sunbury, Pa., by Harold B. Donley, manager of the division. Mr. McMann will be located at Westinghouse New York headquarters, 40 Wall Street, and serve all of New England, New York and northern New Jersey.

RMA Export Committee

James F. Weldon, export manager of Sperti, Inc., has been appointed a member of the Radio Manufacturers' Association Export Committee by President Cosgrove, it was announced today. This is the eleventh year in which Mr. Weldon has received this honor.

First Choice
OF AMERICA'S MOTORISTS

Vital wartime developments have simply added to the already great efficiency, top quality and precision workmanship that made Ward Antennas first choice of America's motorists and complete dependability... and yourself maximum profits... look to Ward. Order the world's finest antennas for car and home now!

THE WARD PRODUCTS CORPORATION
1523 EAST 45th STREET • CLEVELAND 3, OHIO
IN CANADA: ATLAS RADIO CORP., 560 KING ST. W., TORONTO
Export Dept.: 4900 Euclid, Cleveland, O.

WARD Antennas

SUBSCRIPTIONS TO "RSD" ARE BEING ACCEPTED AGAIN

USE COUPON PRINTED BELOW

12 ISSUES \$2

24 ISSUES \$3

In the U. S. A. & Possessions —
In Canada & Foreign Countries \$3 per yr.

To the hundreds of new subscribers who have been on our "waiting list" for so long a time, thanks for your patience.

To our old subscribers! If you have a friend or business associate desiring to subscribe to RADIO SERVICE DEALER, have them place their order with us at once so it may be honored as quickly as possible, in the order received.

When a subscription of "RSD" is about to expire, notification is given two months in advance. If you receive such notice please act promptly so you will not miss any issues.



COWAN PUBLISHING CORP.

342 Madison Ave., New York 17, N. Y.

Gentlemen: Please send the next issues of RADIO SERVICE DEALER. Our remittance in the sum of \$..... is enclosed.

Name
Address
City Zone State
Firm Employed By:
Position or Title

National Union Rep

National Union Radio Corporation announces the appointment of Mr. Gail Halliday as District Manager for the states of New Mexico, Colorado, Utah, Wyoming, Montana and Southern Idaho, including Pocatello and Twin Falls. Mr. Halliday is located at 1526 Ivy Street, Denver, Colorado.

Mike Stands

Universal Microphone Co., Inglewood, Cal., is now delivering a new microphone floor stand, the first from the coast factory since Pearl Harbor. It is called model A63 with a list of \$12.50 and distribution through regular jobbing channels.

A63 uses three upright sections, with knurled adjustment collars, satin chrome plated, and a base of cast iron with black wrinkle finish. It can be used with any microphone that has a $\frac{5}{8}$ "-27 thread. Range of the adjustable height is 26 to 64 inches. It can be used as a table or floor stand, with portable equipment, p.a. systems and a multitude of uses. The base weighs seven pounds; total shipping weight, ten pounds. The stand and base are packaged separately.

Hoffman Sales Staff

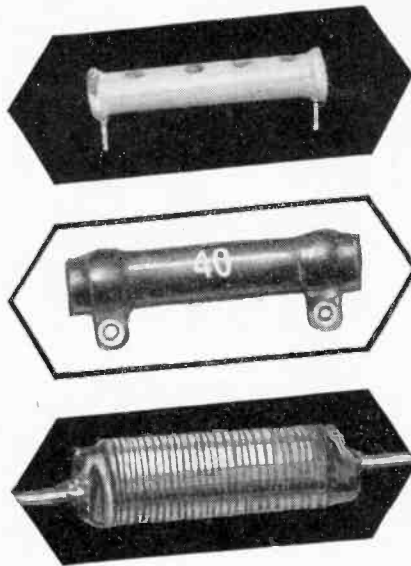
Changes in the sales organization of the Hoffman Radio Corp., Los Angeles, have been announced by H. Leslie Hoffman, president. R. J. McNeely, sales manager, will fill the newly created post of general sales manager. D. D. Spence becomes assistant sales manager. Earl F. Noyes, company employment director, transfers to sales to supervise the Los Angeles area, San Bernardino county, and the coast from San Juan Capistrano to Paso Robles. Harlan Bassett has transferred from outside production to sales and also E. H. Knox, former plant supt.

Howard Radio Rep

Howard Radio Company of Chicago announces the appointment of L. S. Gershon, 436 Ridge Building, Kansas City, Missouri, as factory sales representative. Mr. Gershon, who is widely known in the industry, will direct the appointment of Howard radio distributors and the franchising of dealers in the states of Missouri, Iowa, Kansas and Nebraska.

Robolite Item

Universal Microphone Co., Inglewood, Cal., announces the formation of its Robolite Division and has converted parts of plants 1 and 2 for the new production. Jackson M. Kling.
[Continued on page 73]



Hi-Q
**CERAMIC
CAPACITORS**
**WIRE WOUND
RESISTORS**
CHOKO COILS

The line to "get a line on"
for your postwar sales.

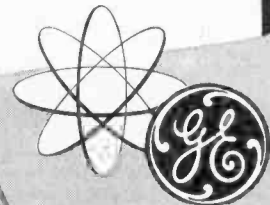
ELECTRICAL REACTANCE CORPORATION
FRANKLINVILLE, N. Y.

G-E TUBE CHECKER Quick, easy, accurate tube checking which saves you time and trouble and keeps your customers happy—that's the job the TC-3P is built to do. Line Voltage and tube quality, or shorts, may all be checked on one selector switch. Individually operated switches permit placing the proper voltage on the proper pin of the tube. The G-E Tube Checker is available in either the Portable (TC-3P) or Counter Model (TC-3). Write: Specialty Division, Electronics Department, General Electric Company, Syracuse, New York.

GENERAL ELECTRIC

177-D1

Electronic Measuring
Instruments



TC-3P

Now— Immediate Delivery!

Priorities on all radio parts and electronic equipment have been removed! You can again order long-scarce items, until now available only to producers for war. Concord is ready to fill your needs from vast stocks.

RADIO PARTS ELECTRONIC EQUIPMENT

Order Today for Shipment Tomorrow

Our shelves are loaded with Condensers, Transformers, Tubes, Resistors, Test Equipment, Amplifiers, Repair and Replacement Parts of every description, and hundreds of other essential items. Our warehouses can ship most orders in 24 hours. Order from CONCORD for dependable quality, excellent values, and immediate service.

**COMPLETE STOCKS AT
CHICAGO AND ATLANTA**

Aerovox • Amphenol • Amperite • Centralab
Cornell-Dubilier • General Electric • Halli-
crafters • IRC • Jensen • Mallory • Meissner
Ohmite • RCA • Readrite • Shure • Sprague
Stancor • Supreme • Thordarson • Triplett
UTC • Weston

Use our previous Catalogs No. 345 and No. 94. They offer thousands of parts and many types of equipment AVAILABLE NOW for immediate shipment.

**Mail Coupon for
FREE Victory Clearance Flyer**

Just published—exciting new Flyer offering thousands of standard-line, standard-quality parts and equipment at Victory Clearance prices. Consult this Flyer before you buy, and save money. Mail coupon below for your copy—it's FREE.

CONCORD RADIO CORPORATION
Lafayette Radio Corporation
CHICAGO 7, ILL. ATLANTA 3, GA.
901 W. Jackson Blvd. 265 Peachtree Street

CONCORD RADIO CORP.
901 W. Jackson Blvd. Dept. K-105
Chicago 7, Ill.

Send me at once copy of VICTORY CLEARANCE FLYER—free.

Name.....
Address.....
City..... State.....

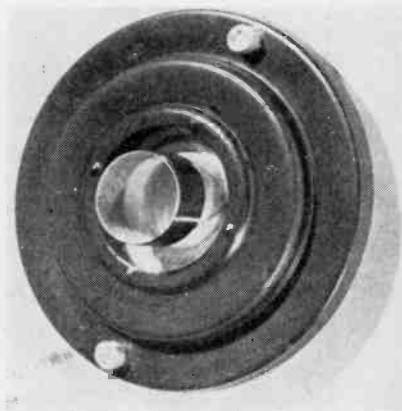
TRADE PRODUCTS



Home kit, rechargeable flashlight battery, in dealer counter display. Kit includes flashlight case with bulb, rechargeable flashlight storage battery, water dropper, battery wrench and charger; operates from any 115-volt, 50-60 cycle outlet. A light on charger indicates when battery is charging. Also comes in automobile kit, with auto charger, operating from 6-volt battery in auto, truck or boat. Ideal Commuator Dresser Co., Sycamore, Ill.

determine the condition of all tubes. Instructions and test chart have simplified arrangement for quick reference and large easily read printing.

The new "Square-Line" case, tan with brown trim, 10"x10"x5 3/4", is furnished with a sturdy leather strap handle and detachable, hinged cover for portable use. Used as a counter tester it adds distinction to any shop. Write for circular to: The Triplett Electrical Instrument Co., Bluffton, Ohio.



"Adjust-A-Cone" Loudspeakers

An entirely new and patented feature, called the "Adjust-A-Cone", will now be included in the entire line of postwar loudspeakers being marketed by Quam-Nichols Co., 33rd Place & Cottage Grove Avenue, Chicago, announces J. P. Quam, president of the firm.

In this new unit, the spider of the loudspeaker, instead of being permanently glued or fastened to the basket or pot, is kept in position with a pressure or clamping ring, which is in turn held down by two machine screws. By loosening the screws holding the pressure ring, a small lateral movement of the spider is permitted by which the voice coil can be re-centered concentrically around the pole-piece and within the gap.

This new feature will be of great advantage to the serviceman, as the screws holding the clamping ring in this unit are so positioned that it is often unnecessary to remove the loudspeaker from the chassis to re-center the voice coil. Neither need a rubbing voice-coil assembly be replaced as heretofore.

It is believed that the "Adjust-A-Cone" presents one of the first distinctive improvements in loudspeaker design in the past decade.



Triplet Tube Tester

This new tube tester (Model 2413) with a flexible test circuit provides for "tube value" test, short and open element test—plus a transconductance comparison check for matching tubes. Three-position lever switching makes this one of the speediest and most flexible of all tube testers—provides simplicity in operation and still gives individual control for each tube element.

The long scale instrument carries the exclusive Triplet RED DOT lifetime guarantee against defects in workmanship or materials. The multi-color scale makes it easy to quickly

In Trade

[from page 71]

E. Orange, N. J., will be exclusive representative for chain stores and mail order houses. Dee Breen, Universal sales manager, will handle other distribution through regular jobbing and retail channels. The Robolite is a tiny electronic nite lite or pilot lamp designed for use wherever darkness creates a hazard such as photo dark rooms, stage indicator, building marker, nurseries, and so forth. It operates on AC or DC at a cost of a dime a year, according to the manufacturers.

Masco Licensed

Mark Simpson Manufacturing Company, manufacturers of Masco Sound Equipment and Accessories, have just completed license negotiations with the Western Electric Company for the manufacture of amplifiers, sound systems and intercommunication equipment under Western Electric patents.

Scott Wire Recorder

Scott Radio Laboratories Inc., Chicago franchise holders for the Armour Magnetic Wire Sound Producer and Recorder, state that highly improved models of the wire recorder will be ready shortly for home recording. They will enable consumers to record programs as well as musical selections directly from their radio sets on wire that is nearly as thin as a human hair. These models will be available through dealers who handle Scott radios.

Ranges Soon

Production of electric ranges during 1946 would outstrip any previous year, is forecast. The first range models, built under an order to meet essential civilian requirements, will not be sufficient to meet the present demand even for dealer displays, according to Gregory L. Rees, manager range sales division, Edison General Electric (Hotpoint) Appliance Company, who said that the models would be the first the company has made since April, 1942. It will be well into 1946 before any large scale production would be under way, and that the public would not be able to buy electric ranges readily until the latter part of the year, despite the accelerated production.

The new ranges will be produced in three models: the Hotpoint Masterpiece RC-8 deluxe range; the Hotpoint Hostess RB-17, a moderate priced model; and Hotpoint Century RC-15, to sell in the lowest price class.

[Continued on page 75]



Watch this space
for our announcement
of an important new product . . .



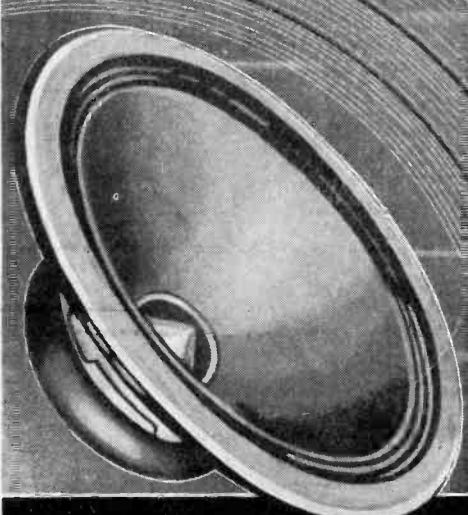
ADAPTOL COMPANY

260 Utica Avenue


Brooklyn 13, N. Y.

Tone...

Always a Deciding Factor



In the selection of any musical instrument, tone is of vital importance. Cinaudagraph Speaker Engineers have kept pace with every tone advancement — pioneered many new developments. That's why you'll want tomorrow's, better than ever, Cinaudagraph Speakers in every fine receiver — every quality sound unit.



Cinaudagraph Speakers, Inc.
3911 S. Michigan Ave., Chicago
Export Div., 13 E. 40th St., New York 6, N. Y.

"No Finer Speaker in all the World"

LEO'S SPECIAL!

Immediate Delivery

Money Back Guarantee on this all-purpose

Multitester

Handles AC and DC Voltmeter, DC Milliammeter, High and Low range Ohmmeter. Size 5½x8x3¼. 3" meter with sturdy D'Aronsva movement. Write for priority information.

EVERYTHING IN TEST EQUIPMENT

We have it or can get it. Preferred delivery, quick service on all makes, all types. Hundreds of new items on order. Buy from Leo, W9GFQ.

See Leo for WRL Radio Kits priority required



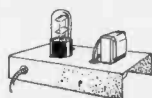
Model WRL 300 ONLY \$18.75 Less Leads



Photo Amplifier Kits Complete with tubes, instructions \$9.50 No. 1059...

PLACE YOUR ORDER NOW!

Leo is making delivery now on **HALLIGRAFTERS** For preferred delivery, easy terms, and liberal trade in allowance write Leo W9GFQ.



Code Oscillator Kits Complete with tube. Size 3"x6". \$4.95 No. 66-200

DUAL FIL. TRANSF. Fully Shielded



110 V. Tapped Primary. Secondary, 5 volt @ 3 amp. and 6.3 V.C.T. @ 4 amp. \$2.25 No. 9-551...

EXCLUSIVE AT LEO'S!

44 Page Parts Flyer... **FREE**

Packed with hard-to-get items. Immediate delivery to radio repairmen. Usual priorities. Experimenters write Leo, W9GFQ, on how to get radio repair parts.

Tube and Circuit Reference Book10c

Handy Tube-Base Calculator25c

Giant Radio Reference Map, Size 3½x4½ ft 15c



MAIL TODAY

Wholesale Radio Laboratories 744 West Broadway Council Bluffs, Iowa SD-10

- Please rush Multitester No. 300, \$18.75 is enclosed, or Enclosed is \$_____, Balance C.O.D.
- Here's 10c, Send "Tubes and Circuits" Book.
- I want a Tube-Base calculator. 25c enclosed.
- Ship me your radio map. 15c enclosed.
- Send me your free flyer of hard-to-get radio parts.

Name _____

Address _____

Town _____ State _____

I am an amateur; experimenter; service man.

QUICK SERVICE

Your order will receive my own personal attention. You'll get "same day" delivery service from the heart of the nation . . . on anything in radio.

Sincerely,
Leo Emerson W9GFQ



Wholesale RADIO LABORATORIES



O. A. Fiebig

Magnavox Appoints

Appointment of O. A. Fiebig as assistant sales manager of the radio-phonograph division of The Magnavox Company is announced by N. B. Sherrill, Jr., sales manager. Mr. Fiebig's experience and achievement in sales and merchandising will prove beneficial to the Magnavox sales program which, in addition to merchandising the new line of Magnavox instruments, includes a sales and service training course for dealers and salesmen.

Magnavox will continue its policy of selective direct factory-to-dealer distribution, and the outlets chosen to represent its products will continue to be only the top music, furniture, or department stores in each city.

Association Chairman

At a recent meeting of the Association of Electronic Parts and Equipment Manufacturers at the Electric Club of Chicago, J. A. Berman, General Sales Manager of Shure Brothers, Chicago, was elected Chairman for the forthcoming year. In addition, the following officers were elected: Roy S. Laird, Vice Chairman (vice president, Ohmite Mfg. Co.); H. A. Staniland, Treasurer (treasurer, Quam-Nichols Co.).

This association, consisting of electronic parts manufacturers of the mid-west, has been in existence a number of years.

J. A. Berman



DISPLAYS



Above: Single record and album holder. Dummy record does double duty as support for record or album displayed, as promotion piece when empty. Below: "Children's Music House" serves 3-fold purpose of display, stocking and self-selection of picture albums for youngsters. These displays are part of a series of merchandising aids RCA-Victor is making available to its dealers.



District Managers

Mr. Henry Hutchins, President of the John Meck Industries Sales Corporation, announces the following men have been appointed district managers: R. M. Brotherson, Chicago, Illinois; W. A. Hendrickson, Scituate Center, Massachusetts; J. W. Marsh, Los Angeles, California; L. D. Marsh, Seattle, Washington; L. W. Maynard, Clayton, Missouri; L. R. Schenck, Livingston, New Jersey; W. G. Steward, Philadelphia, Pennsylvania; M. F. Taylor, Silver Springs, Maryland; R. H. Van Dusen, Winter Haven, Florida; P. A. Boyd, Pittsburgh, Pennsylvania; J. M. Maynard, Dallas, Texas; Gail Halliday, Denver, Colorado.

In Trade
[from page 73]

Radio for Trucks

Radio control for the truck-trailer carrying important loads over the highways of the country has passed the experimental stage and promises to become an important aid in dispatching motor freight. F. M. Reid, chief engineer Fruehauf Trailer Company, states that, "Radio communication between dispatching office and the truck-trailer would improve the speed, efficiency and safety of operation throughout the nation. In fact, it would be a safety measure for all types of road traffic because in times of accident, even to passenger cars, the truck operator is generally the first to stop to render assistance." Application has already been made to the Federal Communications Commission by Highway Radio, Inc., a subsidiary of the American Trucking Associations, Inc., for two-way bands.

RMA on Women in Radio

The beachhead won by women in key jobs in the radio manufacturing industry has been consolidated, a survey just completed by the Radio Manufacturers Association discloses. In key technical jobs requiring more than average schooling as well as practical experience in radio assembly, women have proved that they are as efficient as men. A spokesman for the RMA pointed out that there is virtually no technical job in the industry which cannot be handled by a woman who is properly trained for it.

Dealers Get Record-Film Tie-In Promotion

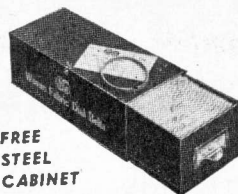
A unique motion picture-record tie-in mutually promoting Dinah Shore recordings and her current starring vehicle, "Belle of the Yukon," in which the disc tunes are featured, has been developed by RCA Victor and International Pictures.

Made available to Victor record dealers as a result of this tie-in is a colorful, eye-catching souvenir envelope designed to hold the two Dinah Shore discings of the film tunes. The souvenir envelope, displaying a large photograph of the popular songstress and three costume pictures from the film, is expected to stimulate the sale of her two records as a single unit.

The envelopes are suggested as window or store displays. Two title strips on the featured songs are also being offered dealers for use in counter merchandisers or single record displays.

[Continued on page 77]

SPEED UP REPAIRS WITH THESE G-C AIDS!



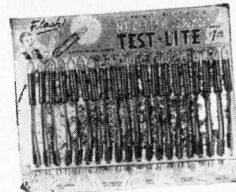
FREE STEEL CABINET

G-C Dial Belt Kits

Exact replacement woven fabric belts. Easy to install — no stretching — no adjustments — a perfect fit every time. Kits come with 25, 50, 100, 200 or 300 belts.



G-C Wire Stripper
Strips insulation from all types of wire. Does the job instantly, easily, perfectly. An ideal tool for radio men, electricians and sound men.



G-C Ne-O-Lite
New improved design. Useful hundreds of ways. Tests AC and DC lines, DC Polarity, fuses, etc. You can't afford to be without this handy all-purpose trouble shooter.

Immediate delivery on all G-C Products

Order From Your Radio Parts Jobber
ALWAYS ASK FOR G-C PRODUCTS



GENERAL CEMENT MFG. CO.
ROCKFORD, ILLINOIS

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of RADIO SERVICE DEALER, published monthly at Orange, Connecticut, for October 1, 1945.

State of New York }
County of New York } ss.:

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared Sanford R. Cowan, who, having been duly sworn according to law, deposes and says that he is the Publisher of RADIO SERVICE DEALER, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are: Publisher, Sanford R. Cowan, 1620 Ocean Ave., Brooklyn 30, N. Y.; Editor, Lewis C. Stone, 235 E. 22nd St., New York 10, N. Y.; Business Manager, S. R. Cowan, 1620 Ocean Ave., Brooklyn 30, N. Y.

2. That the owners are: Cowan Publishing Corp., 342 Madison Ave., New York 17, N. Y.; and Sanford R. Cowan, 1620 Ocean Ave., Brooklyn 30, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock, and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) SANFORD R. COWAN, Publisher.

Sworn to and subscribed before me, this 14th day of September, 1945.

(Seal.) WALTER J. KOPP, Notary Public.

Kings County, Kings Co. Clk's No. 401; N. Y. Co. Clk's No. 85,

Reg. No. 96-K-7. Commission expires March 30, 1947.

Get **EVERYTHING!**

Standardize on

STANCOR

Transformers

Call your nearest Stancor Jobber...

or write us for his address

STANDARD TRANSFORMER CORPORATION
1500 N. HALSTED STREET • CHICAGO



Because we care

GET BEHIND THE RETAILERS' VICTORY LOAN!

Get behind the Victory Loan to bring our boys back to the America for which they were willing to give their all! Complete your store's service record by backing this last-of-all drive to give our wounded heroes the best of medical care!

Let's Go!

Get your store in step with your industry!

Stores are organized by industry! If you have not already received your copy of the new Retailers' Victory Campaign Book, contact your local Victory Bond Chairman! Newspapers are receiving mats of advertisements for each industry. Use them to show that your store cares.

Let's Go!

Get your "Victory Veterans" into action!

Every member of your 3rd Army of Retail Bond-Sellers is now a Victory Veteran! Organize them to sell Victory Bonds to fellow employees—and to customers. Keep employee and customer enthusiasm high with rallies, competitions, and daily Victory progress reports.

Let's Go!

Boost the new F. D. Roosevelt Memorial \$200 Bond!

Urge your employees to buy the new Franklin Delano Roosevelt Memorial \$200 Bond through the Payroll Savings Plan! Feature this new \$200 Victory Bond in your advertising, and window and counter displays—and sell it to your customers!

Get Going Today!

Every Victory Bond—better than ready cash to the buyer—helps to build peacetime prosperity for our returning heroes, your nation, your community, your employees—and your own store!

The Treasury Department acknowledges with appreciation the publication of this message by

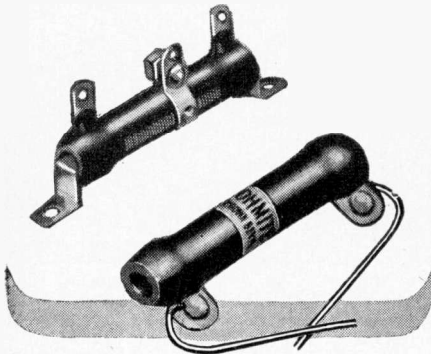
RADIO SERVICE DEALER

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and War Advertising Council

OHMITE RESISTORS

*for accurate
trouble-free*

SERVICE

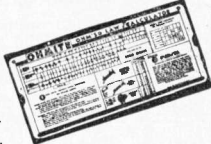


Time-proved, battle-proved, service-proved... Ohmite Brown Devils and Adjustable Divid-ohms are used today in critical war equipment. After Victory . . . these dependable units will again be the favorite of radio servicemen who want and use the best for resistor replacements.

For information about these and other Ohmite Resistors, write for Stock Unit Catalog 18.

SEND FOR HANDY OHM'S LAW CALCULATOR

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



OHMITE MANUFACTURING CO.
4846 Flournoy Street • Chicago 44, U.S.A.

Be Right with **OHMITE**
RHEOSTATS • RESISTORS • TAP SWITCHES

OCTOBER, 1945

In Trade

[from page 75]

Direct Franchises

Applications for dealer franchises are being processed by Electronic Corporation of America according to Jack Geartner, sales manager. The backlog of dealer applications is growing even more rapidly since V-J Day. Each application is being carefully screened because of the policy of selecting only one dealer representative for each type of business in a locality (radio and appliance dealers, furniture, jewelry and department stores). Preference is being given established dealers who have a record for reliability and successful merchandising. Emphasis is placed on the reputation of the dealer for initiative and resourcefulness.

CUT RADIO INTERFERENCE

Tests conducted by RCA Victor have shown that separate shielding of proper design for electronic power generators, work assemblies, and transmission lines will reduce the field strength of radiations which might interfere with home radio reception and other electronic services by a factor of 45,000 to 1.

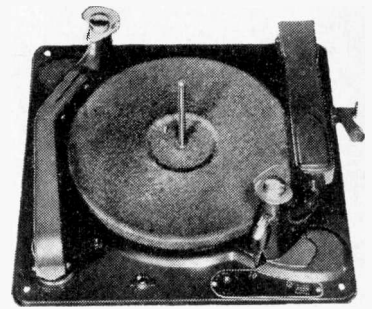
Results of the recently completed tests, which were conducted at a distance of one mile from the generator, were described in a paper presented by G. H. Williams, RCA Victor development engineer, at a meeting of the Philadelphia Section of the American Institute of Electrical Engineers at the Engineers Club.

Advantages of separate shielding, aside from the circumstances that it may sometimes be impossible or inconvenient to house a complete electronic installation in a shielded room, include the fact that the former method is substantially less costly. Mr. Williams pointed out. Without shielding, he said, the field strength of interference radiations from a dielectric heating installation operating on a frequency of 9 megacycles was found to be 316 microvolts per meter. With a single screen cage over the work load, this factor was reduced to 1.3 microvolts. A further reduction to .007 microvolts was obtained by placing a double screen cage over the applicator and load.

With such an arrangement the entire value of the shielding would be temporarily nullified every time it was

[Continued on page 80]

UP FRONT...
Every Time



Combination record-changer recorder
Model GI-RC130

You'll like our postwar line of Smooth Power motors, recorders and combination record-changer recorders. They are right up in front with high-quality, velvety smooth operation, perfect fidelity in recording or reproduction.

They have the same fine design and built-in qualities that deliver complete satisfaction, as always. There is no skimping of details to give us fast production. You'll have a front seat in the postwar markets with General Industries phonograph mechanisms.

THE GENERAL INDUSTRIES CO.
Dept. M • Elyria, Ohio

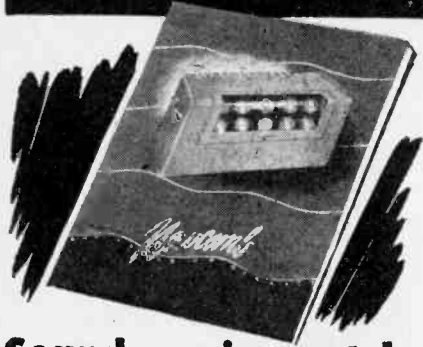


THE
GI GENERAL INDUSTRIES
COMPANY



*Smooth
Power.*

AN ENTIRELY NEW LINE



Sound equipment by NEWCOMB

Our newest amplifiers offer greater excellence in sound reproduction than ever before available to the public address field. Designed by an organization devoted exclusively for seven years to the perfection of sound equipment, they embody all the benefits of today's most advanced electronic achievements.

Send for the catalog... you'll find no other amplifier has so many advantages.

THE SOUND OF QUALITY

Newcomb

AUDIO PRODUCTS CO.
MANUFACTURERS

DEPT. D. 2815 S. HILL STREET
LOS ANGELES 7, CALIFORNIA

OLSON **KIT of 60 CONDENSERS**

MALLORY
SPRAGUE
AEROVOX

REGULAR LIST VALUE, \$14.75

Fresh, guaranteed stock.
600-volt condensers. .001,
.002, .005, .01, .02, .05, .1, .25
MFD. You also get a FREE
Neon Tester with each Kit,
for checking AC or DC, 60
to 500 volts. Don't miss this
swell Olson Bargain!

Our Price,
\$7.50

NEON TESTER
FREE
WITH ORDER!

MAIL THIS COUPON TODAY (Free catalogs on request)

Olson Radio Warehouse
73-B MILL STREET, AKRON, OHIO

Please send me _____ Kits of 60 Condensers at \$7.50 each.

I enclose \$_____ postage paid.
 Send C. O. D.; I will pay postage.
(Include one Neon Tester FREE with each Kit.)

NAME

ADDRESS

Radio Prices

[from page 29]

committee hearings which the Senator said may be held. RMA members also are making direct appeals to their Senators and Representatives, supplemented by similar action of labor union leaders.

That OPA continues firm in its price program, which is a major administration policy backed by Director John W. Snyder of the Office of War Mobilization & Reconversion and also by President Truman, was indicated at industry conferences with OPA. This OPA policy also is being applied generally to other industries. These also are appealing to OPA and to Congress. Among them are the washing and ironing machine group, shoe manufacturers, aluminum wares industry, musical instrument and builders hardware manufacturers. Distributors and dealers also are vigorously protesting the OPA policy requiring absorption of OPA price increases.

Radio industry leaders, including a score of manufacturers of the Chicago group, held extended meetings here this week with OPA officials and urged relief action, especially higher component "increase factors", ranging from 5 to 11%, announced Sept. 1 by OPA.

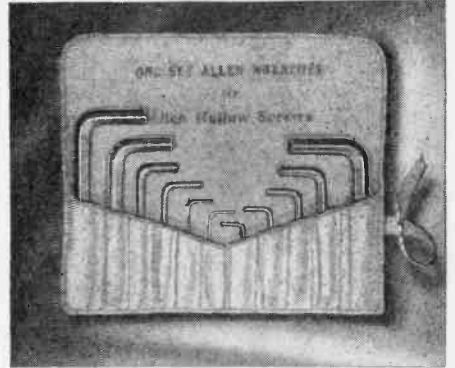
A barrage of telegram, telephone and mail protests to OPA and RMA headquarters followed the announcement of the proposed component "increase factors". Manufacturers also unanimously declared that they would have to continue refusal of orders and shipments because of inability to meet production costs under the OPA decisions. A sheaf of RMA manufacturers' protests was submitted by Mr. Cosgrove to Senator Mead and also Administrator Bowles and other OPA officials.

Numerous conferences are in progress. Participating were president Cosgrove; chairman A. S. Wells of the RMA Reconversion Committee; president Leslie F. Muter heading a large group from the Chicago Radar-Radio Association; chairman M. F. Balcom of the tube manufacturers; chairman R. C. Sprague and director J. J. Kahn of the parts manufacturers; chairman Thos. A. White and James P. Quam of the amplifier and speaker groups, and many others.

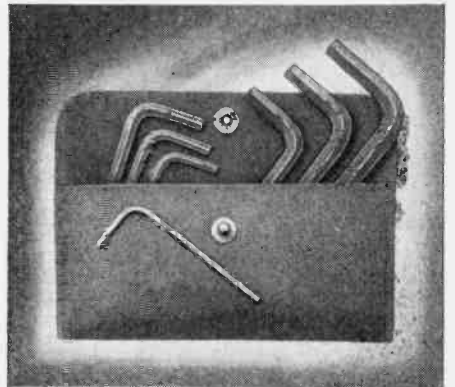
Component manufacturers are submitting additional data to OPA to support their necessities for upward revision of the OPA "increase factors". This will require two or three

ALLEN Key Kits

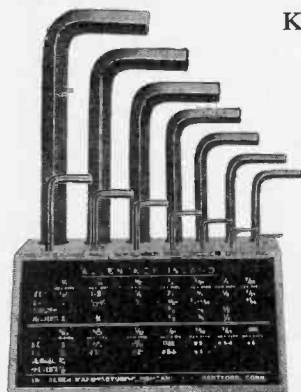
Key Assortments to fit Hex-Socket Screws in the range of sizes the radio mechanic needs for everyday work.



KEY SET No. 603: This canvas partitioned bag contains 11 short arm hexagonal keys which fit all screws from and including No. 10 up to and including 1/4" diameter set screws. List price \$1.75.



JUNIOR KEY KIT No. 604: Seven short-arm Allen Keys are included in this strong leatherette envelope. They fit the hex holes of sizes Nos. 8, 10, 1/4", 3/16", 3/8", 7/16" and 1/2" set screws and Nos. 4, 5, 6, 8, 10, also 1/4" and 5/16" cap screws. List price \$0.50.



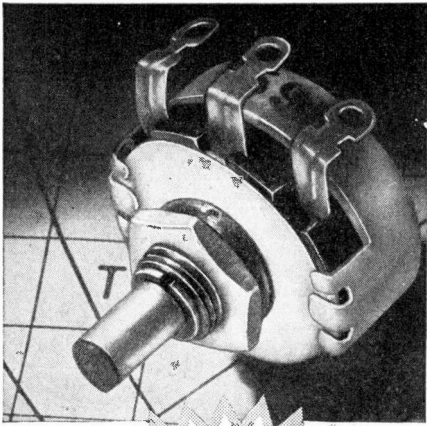
KEY ISLAND

This handy key set contains 14 keys fitting all sizes of set screws up to and including 1/4"; capscrews up to 1"; shoulder screws to 1" and pipe plugs to 1". Container is plainly labeled to show the correct size key to use with each screw. No. 615; list price \$2.35.

Ask for complete listings of Allen Hollow Screw Assortments and Key Kits. Address inquiries and orders to Dept. G,

THE ALLEN MFG. CO.,
HARTFORD 1, CONN., U. S. A.

RADIO SERVICE DEALER



It's a
CLAROSTAT!

★ And that tells the story. For Clarostat is the name and guarantee of a better composition-element control such as is now found in the finest radio-electronic assemblies where trouble and failure just can't be tolerated. The *stabilized* element, exclusive in Clarostat controls, sets new performance standards. Extreme immunity to humidity, temperature and other climatic variations. Rated at 1 watt. Resistance values of 500 ohms to 5 megohms. With or without power switch.

★ Ask Our Jobber . . .



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

ADDRESS CHANGES—

Subscribers to RSD should notify our Circulation Dept. at least 3 weeks in advance regarding any change in address. The Post Office Dept. does not forward magazines sent to a wrong address unless you pay additional postage. We cannot duplicate copies of RSD sent to your old address.

Cowan Publishing Co.

342 Madison Ave., New York 17, N. Y.

weeks before the final and revised OPA decisions can be made, also delaying the OPA receiving set "increase factor" which will be based partially on the final component price percentages. Applications for individual company relief also are being made, but OPA officials said that its "general rescue clause" issued at this time, for companies facing production losses, is not available to radio manufacturers.

Television Background

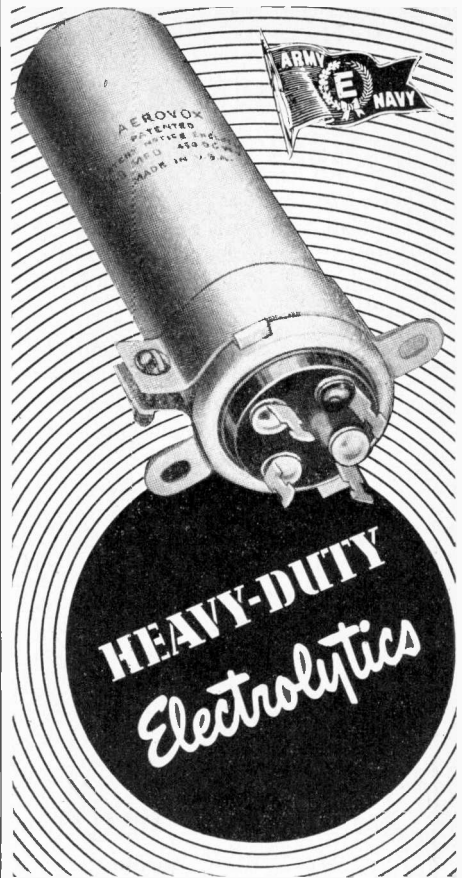
Experimenting for months on their own time, a young advertising agency artist and a television engineer believe they have found the solution for a television background problem that has baffled video experts for years.

The answer is so simple Chet Kulesza, technical supervisor of art and production at Batten, Barton, Durstine & Osborn, Inc., and Ted B. Grenier, chief engineer of Metropolitan Television, Inc., are amazed no one thought of it before—so simple, in fact, it isn't patentable and their only hope of reward is in getting credit for the development.

Use of reflective metallic backgrounds—instead of the usual flat grays—according to Kulesza, results in black tones being blacker when televised; clarity of vari-colored objects is greatly improved; the problem of back lighting is simplified, and less light is required for the cameras. Reflective silver background was used (for the first time, it is believed) on the Du Pont telecast of "How's Your Imagination?" Friday, Sept. 14, over WGRB, Schenectady. First of a two-part series of 15-minute shows, the second of which is scheduled Sept. 21, the program, narrated by L. F. Livingston, demonstrates some post-war potentialities of products developed through chemistry.

Results, according to F. A. (Ted) Long, in charge of BBDO television activities, and Miss Jo Lyons, assistant, were better than any achieved heretofore with flat gray backgrounds. Nylon stockings, cellulose sponges, non-static sheeting and other objects, shown against the silver background and the silver-colored covering on a table, came through receivers with improved clarity, and sponsor identification on titles was much more distinct than when other backgrounds were used.

Experiments he and Grenier have conducted, Kulesza said, indicate metallic backgrounds — silver, gold, copper, bronze—are better for general purposes than anything yet used.



● Now that V-J day has come and gone, those heavy-duty metal-can electrolytics are once again becoming available for civilian use. Once again the Aerovox electrolytic line is providing that outstanding choice of types for the better jobs you are out to do in the post-war radio and electronic world. ● Ask our jobber about those Aerovox types now becoming available. Ask for the latest catalog. ● Or write us direct.



AEROVOX CORP., NEW BEDFORD, MASS., U. S. A.

In Canada: AEROVOX CANADA LTD., HAMILTON, ONT.

Export: 13 E. 40 St., NEW YORK 16, N. Y. Cable: 'ARLAB'

LEARN RADIO IN DENVER

Lower living costs

Straight technical course with three months training plus 3 months actual radio servicing experience at pay. Day and evening classes. Radio communications course. Microphone technique course.

WESTERN RADIO INSTITUTE

1457 Glenarm, Dept. RS, Denver 2, Colo.

● **Ted McElroy**

World's Largest Manufacturer of Wireless Telegraphic Apparatus

COMPLETE CENTRAL OFFICE EQUIPMENT

McElroy Manufacturing Corp.

82 Brookline Avenue • Boston, Massachusetts

Help Wanted!

TECHNICAL EDITORS!!

We are increasing our staff—need a technical editor and assistant technical editors having practical knowledge of radio servicing.

Must be able to write simply on servicing methods, test equipment applications, special circuit problems, trouble shooting, installation and servicing of FM and television receivers and antennas, bench short cuts and miscellaneous subjects incidental to the radio service field.

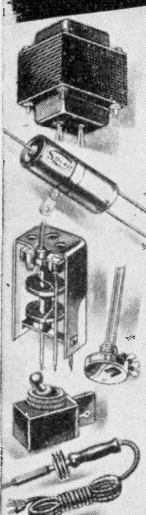
Excellent remuneration. Give details, experience, etc., so an interview can be arranged. Write to:

**EDITOR,
RADIO SERVICE DEALER**

342 Madison Avenue,
New York 17, N. Y.

RADOLEK

Radio-Electronic Service Parts



Large stocks assure the finest and most complete selections of all available items at lowest prevailing prices. Thousands of active buyers depend on us for their entire Radio repair and replacement requirements. Because we understand service problems, every order is expedited for delivery in double quick time. Everything we do is planned for convenience and satisfaction to our customers. You will find it profitable to make Radolek your buying headquarters.

FREE BUYING GUIDES

Because of existing conditions we keep our customers right up to the minute on available merchandise by releasing supplements frequently instead of sending our regular Big Profit Guide once a year. Send the coupon now to get these Free Buying Guide Supplements as they are issued.



FAST SERVICE!

RADOLEK CO., Dept. R-107
601 W. Randolph St., Chicago 6, Ill.
Please send FREE Buying Guide Supplements

NAME _____
ADDRESS _____

ORDER FROM RADOLEK

Ad Index

Adaptol Company	73	Meck Industries, John	4
Agency: Hart Lehman, Advertising		Agency: Aitkin-Kynett Co.	
Aerovox Corporation	79	Meissner Mfg. Co.	25
Agency: Austin C. Lescarbourea & Staff		Agency: Gardner Advertising Co.	
Allen Mfg. Company, The	78	Murray Hill Books, Inc.	57
Agency: Norris L. Bull, Advertising		Agency: The Harry P. Bridge Co.	
Astatic Corporation	60	National Carbon Company, The	11
Agency: Wearstler Advertising, Inc.		Agency: J. M. Mathes, Inc., Adv.	
Burgess Battery Co.	22	Newcomb Audio Products Co.	78
Agency: Howard H. Monk & Associates		Agency: Gail Hall Advertising	
Burstein-Applebee Co.	80	Ohmite Mfg. Company	77
Agency: Frank E. Whelan Co.		Agency: Henry H. Teplitz, Adv.	
Centralab	66	Olson Radio Warehouse	78
Agency: Gustav Marx Adv. Agency		Agency: Jessop Advertising Co.	
Cinaudograph Speakers, Inc.	73	Racon Electric Co.	63
Agency: Michael F. Mayger		Agency: Leon Allen Advertising	
ClaroStat Mfg. Company	79	Radiart Corporation	26, 27
Agency: Austin Lescarbourea & Staff		Agency: Kenneth H. Kolpien, Advertising	
Concord Radio Corp.	72	Radio Corporation of America 2, 14, 15, 18	
Agency: E. H. Brown Advertising		Agency: Kenyon & Eckhardt, Inc.	
Eastern Amplifier Corp.	67	Radio Wire Television	3
Agency: Roberts & Reimers, Inc.		Agency: Diamond Seidman Company	
Electrical Reactance Corp.	71	Radolek Company	80
Agency: Scheel Advertising Agency		Agency: Turner Advertising Agency	
Fawcett Publications, Inc.	13	Raytheon Mfg. Corporation ... 4th Cover	
Agency: L. E. McGiverna & Co., Inc.		Agency: Burton Browne Adv.	
General Cement Mfg. Co.	75	Saturday Evening Post, The	16, 17
Agency: Turner Advertising Agency		Agency: MacFarland, Aveyard & Co.	
General Electric Co.	12, 71	Simpson Electric Co.	6, 7
Agency: Maxon, Inc.		Agency: Kreicker & Meloan, Inc.	
General Industries Co., The	77	Simpson Mfg. Co., Mark	62
Agency: Fuller & Smith & Ross, Inc.		Agency: Edward Hamburger Adv. Co.	
General Transformer Co.	23	Snyder Manufacturing Co.	69
Agency: O'Neil, Larson & McMahon		Agency: E. L. Brown Advertising	
Hallicrafters Company, The ... 3rd Cover		Sparks-Withington Co., The	1
Agency: Burton Browne Advertising		Agency: Brooker, Smith, French & Dorrance, Inc.	
Hytran Corporation	5	Sprague Products Co.	10, 55
Agency: Henry A. Loudon, Adv.		Agency: The Harry P. Bridge Co.	
Ideal Commutator Dresser Co.	64	Standard Transformer Corp.	75
Agency: Van Auker & Ragland		Agency: Burnet-Kuhn Adv. Co.	
International Detrola Corp.	19	Superior Instruments Co.	65
Agency: Zimmer-Keller, Inc.		Agency: Mitchell Advertising Agency	
International Resistance Co.	8	Sylvania Electric Products, Inc.	21
Agency: The Lavenson Bureau		Agency: Newell-Emmett Co.	
Jensen Radio Mfg. Co.	59	Triplett Electrical Instrument Co. ...	68
Agency: Burton Browne Advertising		Agency: Western Advertising Agency	
Ken-Rad	61	U.S. Treasury Dept.	76
Agency: Maxon, Inc.		Ward Products Corp.	70
Mallory & Co., Inc., P.R. ... 2nd Cover,		Agency: Burton Browne Adv.	
Agency: Aitkin-Kynett Co.		Western Radio Institute	79
Marion Electrical Instrument Co. ...	24	Weston Electrical Instrument Corp. ...	66
Agency: Shappe-Wilkes, Inc.		Agency: G. M. Basford Co.	
McElroy Mfg. Corp.	79	Wholesale Radio Laboratories	74
Agency: Shappe-Wilkes, Inc.		Agency: Pfeiffer Adv. Agency	

In Trade

[from page 77]

necessary to open a work-access door, unless some special provision were made. Without such provision or the alternative of switching off the power every time a door in the cage was opened, the field strength of radiations at one mile in these tests would have jumped to 316 microvolts and remained there until the door was closed.

A solution was found for operations in which a conveyor belt could be used to carry work to the applicator assembly by cutting an opening in the side of the cage to admit the belt and the work and extending outward the edges of the opening. This measure served to trap the greater part of the radiations which would otherwise escape. When a slot 1 inch by 30 inches long was used, with the edges extending 8 inches perpendicular to the cage, the radiation field strength at one mile was only .04 microvolt.

FREE

TO

RADIO MEN



COLOR CODE and OHMS LAW CALCULATOR

Burstein-Applebee of Kansas City offers you this great convenience FREE. Easy to work. Solves many problems in a jiffy. FREE to radio men, electronic engineers and others in the business. Attach coupon to your letterhead.

MAIL COUPON NOW

BURSTEIN-APPLEBEE CO.
1012 McGEE, KANSAS CITY 6, MO.

Send me FREE Color Code and Ohms Law Calculator along with latest catalog.

I am _____
STATE CONNECTION IN INDUSTRY _____

NAME _____

ADDRESS _____

TOWN _____ STATE _____



POWER

HIGH VOLTAGE POWER SUPPLY

This is the RA-38 power supply—another of the numerous valuable items in the group of government radio and electronic supplies offered for general distribution through the Hallicrafters Co., agents for RFC under Contract SIA-3-24.

Output voltage continuously variable from 0 to 15,000 volts. Can be easily adapted to deliver up to 6,000 volts at 1 ampere. Excellent power supply for laboratory work or can be used as power source for broadcast stations, induction heating equipment, vacuum tube life tests and many other industrial applications.

THESE VALUABLE ITEMS

Available Now

or very soon. Write, wire or phone for further information.

- head phones • test equipment • component parts • marine transmitters and receivers • code practice equipment • sound detecting equipment
- vehicular operation police and command sets • radio beacons and airborne landing equipment.

hallicrafters RADIO

HALLICRAFTERS CO., AGENTS OF RFC UNDER CONTRACT SAI-3-24
MANUFACTURERS OF RADIO AND ELECTRONIC EQUIPMENT

CLIP THIS COUPON NOW

RFC DEPARTMENT 205 HALLICRAFTERS
5025 West 65th Street • Chicago 38, Illinois
 Send further details and price on RA-38 Power Supply
 Send listings of other available items

Especially interested in.....

NAME.....

ADDRESS.....

CITY.....ZONE.....

STATE.....

The Reader's Digest, in its Aug., 1941 issue, ran an article saying that investigators on its staff found that radio service-dealers cheated the public on 64 out of 100 repair jobs. After citing several examples, the article ended with a warning that radio owners should "beware" of the repair man.

N. Y. HERALD TRIBUNE
JANUARY 24, 1945

City License Law Urged For Radio Repair Men

Magistrate James A. Blanchfield declared yesterday in Flatbush Court that he would ask the City Council for a law requiring

SHOULD RADIO SERVICE DEALERS BE LICENSED?

THE NEW YORK TIMES
JANUARY 24, 1945

RADIO RACKETEERS ASSAILED BY COURT

Says Repair Men Should Be Licensed

N. Y. WORLD-TELEGRAM
JANUARY 23, 1945

Irked Magistrate Lashes at Racket in Radio Repairs

Declaring that radio repairmen were fleecing customers by charging all the time would bear. Magistrate James A. Blanchfield in Flatbush Court, Brooklyn, would take up the racket.

RAYTHEON
HAS THE ANSWER!
watch for announcement
to be made soon

No intelligent radio service-dealer will deny the fact that the reputation of his industry has suffered in recent years.

Unethical servicemen who have taken advantage of manpower and parts shortages have done great damage to public opinion. They have caused so much adverse publicity in national magazines and influential newspapers that dealer-licensing, federal regulation and even finger-printing are being suggested for the public's protection.

Raytheon began many months ago to remedy this situation, and now has the answer in a strong merchandising program to be announced soon.

It will be revolutionary in every respect, enabling the public to tell which service-dealers deserve complete trust and confidence.

Dealers who can qualify will immediately have a tremendous competitive advantage. Watch for our announcement!

Raytheon Manufacturing Company
RADIO RECEIVING TUBE DIVISION
NEWTON, MASS. • LOS ANGELES • NEW YORK • CHICAGO • ATLANTA



Listen to
"MEET YOUR NAVY"
AMERICAN BROADCASTING CO.
Every Monday Night
Castle Coast
181 Stations

All Four Divisions Have
Been Awarded Army-Navy
"E" With Stars



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