

radio service dealer

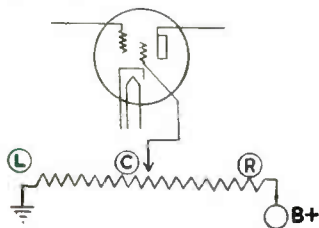


In
This
Issue:

Grid-Biasing Methods—Multi-Testers
Electronic Conference Exhibitors
Television Survey—Industrial Sound

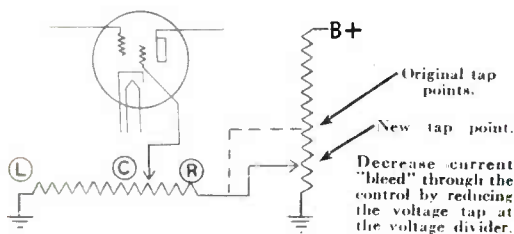
October, 1944
25c

Original Circuit

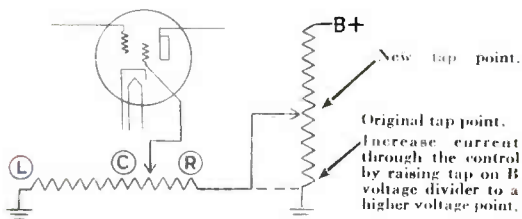


Suggestion No. 1 for 10,000 ohm wire-wound original control.
No change necessary.

Suggestion No. 2 where original control is under 10,000 ohms.



Suggestion No. 3 where original control is over 10,000 ohms.



Suggestion No. 4 Change circuit to Antenna Bias. Wire in screen circuit permanently at correct voltage.

To Help You Replace Volume Controls in Screen Circuits with the 10,000 Ohm Linear Units

In screen voltage control circuits, the action of the control is similar in most respects to the action obtained by controlling the bias of the tube. The mutual conductance (plate current to grid voltage trans-conductance) of the tube varies with the screen voltage.

When you must make a replacement and are unable to match the value and taper of the original control, try whichever of the four suggestions listed here fits your particular job. The suggestions are purposely general—to show the possibilities of wartime radio servicing. In cases where you feel you require additional assistance, send your problems to Mallory Technical Information Service. We'll be glad to help you find solutions.

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



Buy More War Bonds

Mallory Helps for the Radio Service Engineer



MYE TECHNICAL MANUAL
— 408 pages of complete data on capacitors, noise suppression, receiving tubes, loud speakers, vibrators, phono-radios, automatic tuning and other valuable information. Available from your Mallory distributor... Price, \$2.00.

4TH EDITION RADIO SERVICE ENCYCLOPEDIA
Complete information on repairing any make or model of receiver. Circuit references, original part numbers and recommended replacements. Available from your Mallory distributor... Price, 95 cents.

P. R. MALLORY & CO. Inc.

MALLORY

Approved Precision Products



HOW BUSINESSES ARE RUINED --



Lets Be Reasonable

by don herold

The wisest thing Abraham Lincoln ever said was: "This, too, will pass." I forget what he said it about. But it was some kind of trouble.

The smartest thing any of us can say about this war is: "This, too, will pass."

If we're wise, we'll figure on still being in business at the same old stand with the same old customers, and some new ones that the satisfied old ones have sent in.

So let's be reasonable. Reasonable (to ourselves and to our customers) in prices. Reasonable in our attitudes. Reasonable in our conduct toward our public.



If possible, we should make some money. There is no point to pleasing customers if we aren't going to be here when they come back for more. We're all entitled to fair mark-up on our merchandise.

I like to see even my competitor make money. It's better for two

of us guys to be making honest money in a community than for both of us to go broke in a big way.

"They do good work and their prices are fair"



"I'll try them"

HOW BUSINESSES ARE BUILT

On the other hand, nobody ever got rich selling the Brooklyn Bridge. There's no future in it. If we overcharge anybody during the war, we'll never see him after that armistice. "This, too, will pass." Let's be here with a lot of old and new friends, when it does.

No. 8 in a series of special messages prepared by America's famous business writer, humorist and cartoonist, Don Herold. . . . In sponsoring these Don Herold "broadcasts," IRC pays tribute to the thousands of Radio Service Men who, whenever possible, specify and use IRC resistance units in their work.



INTERNATIONAL RESISTANCE CO.

401 N. Broad St. • Philadelphia 8, Pa.

IRC makes more types of resistance units, in more shapes, for more applications than any other manufacturer in the world.



1895

1905

1910

1915

1926

1932

1942

DEVELOPMENT!

WARD LEADS THE WAY in the Antenna Field . . .

THE WARD PRODUCTS CORPORATION has long been the leader in the design and manufacture of antennas for automobiles and home radios. Since its beginning WARD has been the recognized pace-setter. Many important design changes, pioneered by WARD, have become accepted standards in the industry. All products bearing the WARD name are quality products, workmanship of craftsmen using modern equipment under ideal conditions. For finest antennas for all automobile and home applications, look to WARD!

BUY WAR BONDS

WARD



Antennas



THE WARD PRODUCTS CORPORATION
1523 E. 45TH STREET • CLEVELAND 3, OHIO

FASHION
NOTES

SYLVANIA SERVICEMAN SERVICE

by
FRANK FAX



SAVE YOUR SUITS — WEAR SYLVANIA WORK CLOTHES

This service coat is a knee-length, double strength herringbone-weave dungaree. Roomy pockets at arm's length. Can be buttoned far down the front to protect street clothes. Available in sizes 36, 38, 40, 42 and 44. Price each: \$1.95.



This service apron, made of heavy green duck, has three tools-and-parts pockets. Just the thing to impress customers with your efficiency and neatness. Buy several, so you'll always have a clean one. Price: only 25 cents



This service jacket is made of the same tough material as the service coat. Single-breasted, three large pockets, full-length sleeves. Just as suitable for shop wear as service calls. Available in sizes 36, 38, 40, 42 and 44. Price: \$1.75



Order from your Sylvania Jobber or direct from Frank Fax, Department RSD-10, Sylvania Electric Products Inc., Emporium, Pa.

SYLVANIA ELECTRIC PRODUCTS INC.
RADIO DIVISION

October, 1944

radio service dealer

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

VOLUME 5, NUMBER 10
OCTOBER - 1944
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SANFORD R. COWAN...*Editor & Publisher* LEWIS C. STONE.....*Managing Editor*
CHARLES H. FARRELL .*Advertising Manager* SYLVIA BORNKOFF.....*Circulation*

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Our Cover: Photograph courtesy of Sylvania Electric Products, Inc.

RCA LEADS THE WAY

KEEPING YOU UP TO THE MINUTE ON TUBE DATA

YOUR business demands that you always have reliable, up-to-date tube information and data at your fingertips for future planning, as well as for today's restricted operations. RCA gets this information out for you when you need it, and the way you need it . . . in a clear and usable form. It's one more service for which distributors, dealers and servicemen look to RCA . . . a part of RCA's continuous merchandising program to provide sales support for you.

Listed here are some of today's most popular RCA publications. They are all available to you—through your RCA distributor, or direct from Radio Corporation of America, Commercial Engineering Section, Dept. 62-22E, Harrison, New Jersey.



1. RCA Tube Substitution Directory
—Lists for radio servicemen over 2000 substitutions for civilian receivers. Includes data on space limitations, circuit and socket changes involved. 16 pages, 8½" x 11", price: 10¢.

2. RCA Receiving Tube Manual (RC-14)
—Basic tube theory, application data, circuits and charts on 340 RCA receiving types. 256 pages, 5½" x 8½", price: 25¢.

3. RCA Receiving Tubes and Allied Types Bulletin (1275-B)
—Characteristics and socket connections of RCA receiving and allied types. 16 pages, 8½" x 11", single copies free.

4. RCA Guide for Transm. Tubes
—Data and circuits for popular power tubes, uhf acorn types, gas-triodes, and gas-tetrodes. Special chart showing air- and water-cooled tubes, rectifiers, cathode-ray tubes, phototubes, voltage-regulator tubes, and special tubes. Facts on design, adjustment, and operation of transmitters. Illustrated. 72 pages, 8½" x 11", price: 35¢.

5. RCA Power and Special Tubes Bulletin (TT-100)
—Covers air- and water-cooled transmitting tubes, rectifiers, television and oscillograph tubes, phototubes, thyratrons, voltage regulators, and special amplifier tubes. Charts of modulator and class C amplifier data, 16 pages, 8½" x 11", single copies free.

6. RCA Phototubes Bulletin
—Phototube theory. Data on 15 types. Circuits for light-operated relays, light measurements, and sound reproduction. 16 pages, 8½" x 11", single copies free.

7. RCA Radiotron Designer's Handbook
Valuable to anyone interested in principles of circuit design. Illustrated, with charts, tables, and miscellaneous data. 356 pages, stiff cover, 6" x 9", price: \$1.00.

8. RCA Tube Handbook—All Types (HB-3)
—Two loose-leaf volumes of data and curves on all RCA receiving, transmitting, cathode-ray and special tubes, and phototubes. Deluxe binders, 5" x 7½". Available by subscription. Write for descriptive folder and order form.

The Magic Brain of all electronic equipment is a Tube . . . and the fountain-head of modern Tube development is RCA.

1919

1944

25 Years of Progress
in Radio
and Electronics



RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

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

with the editor

Tube Situation

SERVICE-DEALERS from Coast-to-Coast report that the replacement tube shortage is becoming more acute day by day. Tube manufacturers have succeeded in providing a trickle of "hot type" and a larger number of "dog type" tubes for dealer use. But the demand far exceeds the supply.

As a consequence many thousands of home receivers are going out of use daily, and no relief is in sight. Only the defeat of Germany can materially change the status quo according to tube makers and the WPB despite any optimistic publicity releases the latter may take pleasure in foisting upon a gullible public.

Dealer Potentials

BECAUSE many radio sets and electrical appliances have been forced into long disuse by the parts and manpower shortage, a large percentage have already become unrepairable as well as obsolete. Technicians will be forced to use good judgment when deciding whether or not a product has reached the don't-pay-to-repair stage.

When appliances and radios again become available the demand will greatly exceed the supply for a considerable time. Service Dealers must not go overboard on new equipment sales at the expense of their repair department because every radio set or electrical appliance unit that is kept in working condition represents fu-

Many New Lines

IN every category of radio and electrical appliance manufacturing there are now many new firms committed. Our records show that there were seventeen set makers pre-Pearl Harbor as against forty-three who have recently stated they're in the postwar home radio set manufacturing business. The same ratios exist in the appliance field.

Likewise, it is to be expected that many new dealers will soon

Meanwhile, dealers are constantly questioned by potential set buyers as to whether or not new sets will be available soon. The answer is obvious. If popular tube types cannot be made to keep old sets operative, it goes without saying that new tubes cannot be made for installation in new sets, manufacture of which is also still restricted. But you can bet a new hat that when, as and if tube makers are given the green light on civilian production, they will apportion a fair share of their initial output for the replacement market. Just be patient, and pray for victory.

ture potential service work even though the unit may only be the second-of-its-kind in a home.

A long period of "sellers marketing" lies ahead. It is a dangerous period, fraught with evil for dealers who do not recognize that Good Will is a priceless asset to every business. Think! How many merchants are you now sore at because they've treated you in a high-handed manner during the recent past? Don't let your customers get angry with you or your establishment if friction can possibly be avoided. Patience, sympathetic explanations and constructive suggestions made now, in the preliminary to selling period, will go a long way in the days ahead.

come into the field. Dealers now operating establishments should rightfully be entitled to first crack at franchises when same are available, and manufacturers are all set to break loose right now. Franchise signing time is here. Don't delay! He who hesitates now may not be lost, but he will be working under an unnecessary handicap.

S. R. Lowan

In & Around the Trade

Being a condensed digest of some of the happenings in and around the radio trade as compiled by the Editors



To meet the need for establishing instant communication in case of floods, fires and other emergencies, the Rock Island Railway is using Motorola transmitting and receiving units. Using local, battery or gasoline generated power, radio-phone contacts can be maintained between isolated points, 30 miles or more away.

Contest for Radio Service Dealers

More than 500 war bond prizes will be contributed by Sylvania Electric Products, Inc. to retail radio stores and service shops participating in a national display contest to promote the sale of war bonds during the sixth war loan. The contest will be directed by the War Advertising Council at the request of the United States Treasury. War bond prizes for the best window or lobby displays devoted exclusively to the sixth war bond drive and featuring a \$100 war bond will be awarded on a state, sectional and national basis. All displays will be judged for sales appeal,

attention appeal and for their artistry and originality.

Retail radio stores participating in the contest, which will begin with the announcement of the opening of the sixth war bond drive by the United States Treasury, will make photographs of their displays and send them to the Sixth War Bond Drive Display Contest Committee, care of Display World, Cincinnati 1, Ohio. Photographs should be 8 x 10 and marked on the reverse side to indicate that they are being entered in the radio stores classification; also the name of the contestant, the name and address of the store where the display is located, and the dates the display was on view to the public.



Dorothy Stevens, sales mgr. Aero Needle Co., greets Jack Heimann and George Russell, who opened sales offices in midwest and south areas

All photographs entered in the contest will become the property of the contest committee and will be presented to the United States Treasury for its use. Entrants will receive an acknowledgement of the photographs sent to the committee. Sylvania will announce details of the contest to all dealers and servicemen by means of special mailings.

Motorola Active

Galvin Manufacturing Corporation, Chicago, announces appointment of Jones-Cornett Electric Co., Welch and Charleston, W. Va., as distributors of the company's lines of radios for home and car, FM and AM table models, consoles and automatic phonographs, AC-DC and battery portables as well as table and console models for farm areas.

Astatic Anticipates

Floyd H. Woodworth, president, announces that Astatic Corporation (Cincinnati and Youngstown, O.) is retaining Ray T. Schottenberg in his position as sales manager of the jobber and public address parts division. Supplementing this activity, Mr. William J. Doyle is in charge of sales to radio set manufacturers, while Mr. Allen J. Stark will direct sales in the radio cable connector division. "This," says Mr. Woodworth, "sets our house in order, in anticipation of an early resumption of civilian product sales to jobber customers and manufacturers."



Albert Kahn

Electro-Voice Corporation

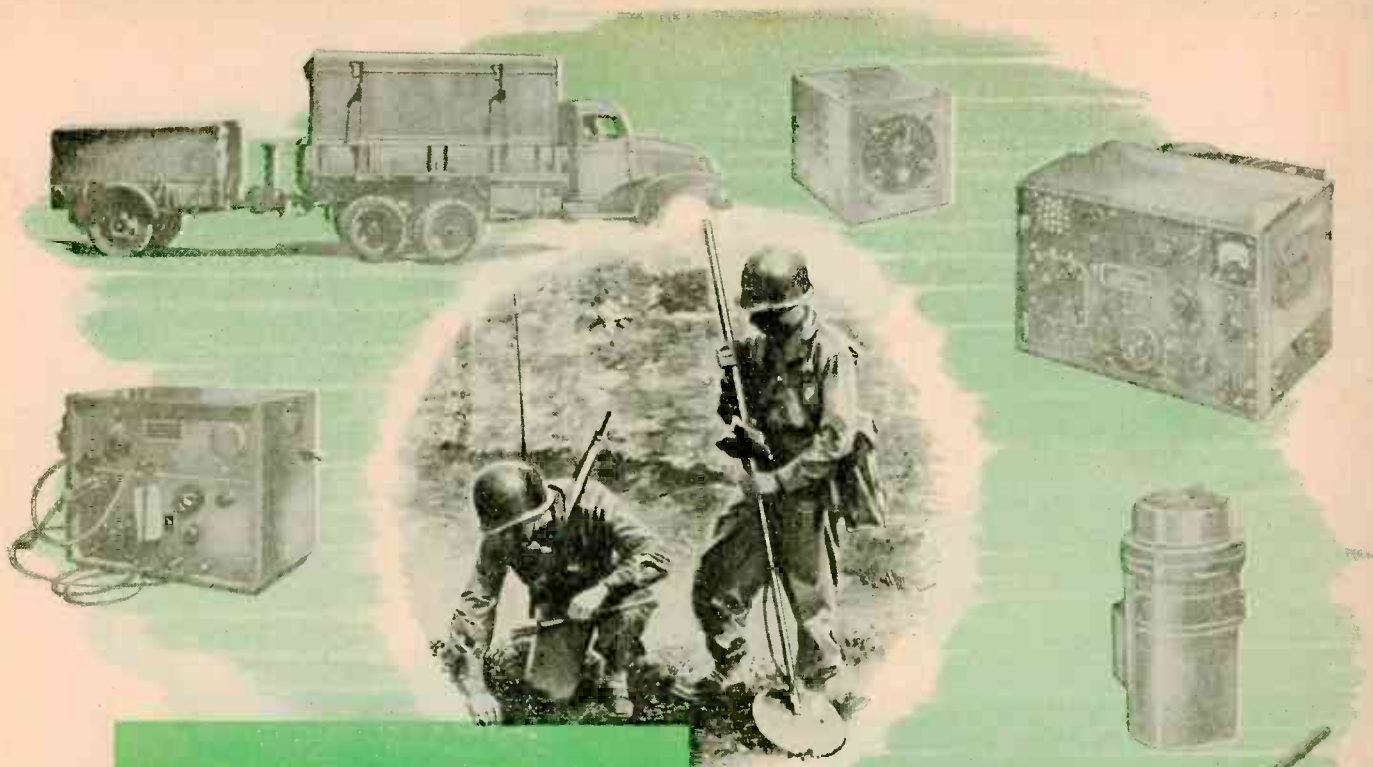
... is the new name of the Electro-Voice Manufacturing Co., Inc. Among recent microphone advances the company developed the T-45 or lip microphone; the 600-D, mobile communications mike; and the new 205-S hand-held noise-cancellation mike.

According to Albert Kahn, president, the corporation's personnel and policy will remain unaffected by the change in name.

Parts Conference Exhibitors

A total of 160 booth assignments were made at the Electronic Parts & Equipment Industry Conference, Stevens Hotel, Chicago, October 19-21, according to publicity chairman Charles Golenpaul. The total was made up of practically all the manufacturers of

(Continued on page 9)

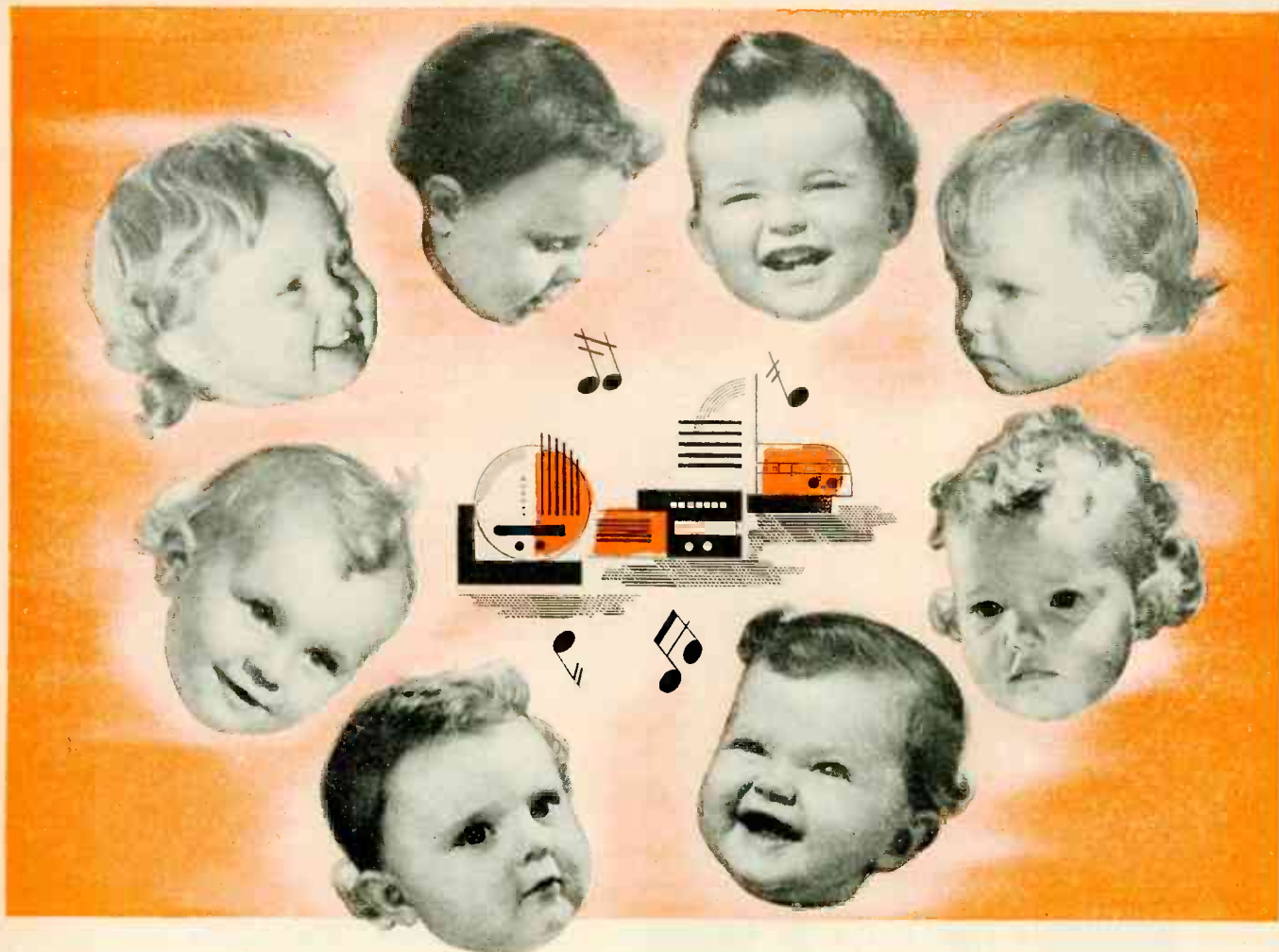


182,826
Man Hours of
RESEARCH

Since Pearl Harbor, International Detrola research engineers have logged this amazing total in their successful efforts to develop and improve Mine Detectors, Aircraft Radio Transmitters, and Receivers, and many other important military electronic devices. The company's other engineering groups also have made great contribution to the quality and volume of electronic weapons streaming from its efficient Detroit assembly lines to the many battlefronts of Victory. The same engineering inventiveness and trained imagination will be an inseparable quality of Detrola-built Radio Receivers, Television Receivers, Automatic Record Changers, and other electronic instruments,

DETROLA RADIO
 DIVISION OF INTERNATIONAL DETROLA CORPORATION • BEARD AT CHEFFIELD, DETROIT 8, MICH.
 C. RUSSELL FELDMANN  PRESIDENT

BUY MORE WAR BONDS



SOME WILL BE OUTSTANDING !!!

Sure . . . all post-Victory radio sets will be new and different. They will be replete with enough new features, improvements and gadgets to astound most dealers . . . certainly all prospects. BUT (and it's a BIG "BUT") you can be sure that some will be outstanding!

You guessed it . . . Maguire Industries, Inc., Home Radio (Electronics Division) will have a prominent place in this outstanding group. Here's the reason: Maguire Industries' policy from the beginning has been based on the assumption that only the best research-engineering brains can conceive, design, and engineer products that will be outstanding in their field. Maguire Industries has been successful in obtaining the services of men acknowledged to be the best in the electronics field.

These scientists have produced a line of Maguire Home Radio Receivers devoid of all the common and uncommon "bugs" that

harass listeners. This is a radio line you will want to display and sell. It guarantees customer satisfaction and the real profits that go with speedy sales and trouble-free operation.

Maguire Industries has won exceptional merit in wartime production . . . in the electronics field; in the small arms field ("Tommy" guns and other small arms); in the food processing field; in the oil producing industry. Now, Maguire Industries has turned the talents of its large staff of scientists, engineers, and technicians to creating products for after-Victory use.

A tip that costs you nothing . . . investigate the Maguire Home Radio Receiver Line now! You'll be surprised with Maguire Industries' liberal dealer policy as well as the exceptional radio. For full information, write Maguire Industries, Inc., 342 West Putnam Avenue, Greenwich, Connecticut today!

A NEW NOTE IN HOME RADIO




MAGUIRE INDUSTRIES, INC.
ELECTRONICS
division

GREENWICH • STAMFORD • BRIDGEPORT • NEW MILFORD • NEW YORK

Radio Service Dealer

In Trade

(from page 6)

parts, electronic equipment, tubes and batteries, together with the publishers catering to the trade. An additional booth was taken by the National Electronic Distributors Association. A full list of the exhibitors begins on page 38 of this issue. Save it for reference, as a check on your sources of supply and also for catalog and other trade material.



Louis W. Hatry Nicholas T. Young

Hatry & Young's 16th Anniversary

The extensive experience of this Hartford, Conn., firm of radio-electronic distributors has enabled it to manage the handling of high-priority war work to the extent of 90 per cent of the total volume. But radio dealers and servicemen were not forgotten, as the firm took advantage of every means allowed by WPB to maintain an inventory of repair parts and other items needed by those accounts.

And here's a reminder—every radio service dealer has a priority of AA-5 MRO for tools, shop and test equipment—(many don't know this)—and can order such items from any wholesaler with that priority. This refers to such hard-to-find items as multi-testers, panel meters, tube testers, ohm-meters, solder-irons and other units for the bench.

Small Business to the Fore

Anticipating a spectacular increase in small new businesses, the Committee for Economic Development has issued a new handbook on special problems of small business. Among its recommendations are that local business men get together to study various local problems, such as:

1. Assisting local enterprises in obtaining the equity capital (loans) which they need and deserve, and where possible to create community investment funds to provide such capital for local small enterprises.

2. Finding out what new enterprises, either in manufacturing, service or distribution, may be most suitable for the community so as to offer permanently profitable opportunities for in-

(Continued on page 10)

Attention

DEALERS-DISTRIBUTORS

A nationally known manufacturer who will produce and deliver a fine, fast-selling, profitable line of

**RADIO RECEIVERS
ELECTRICAL APPLIANCES
SIDE LINE ITEMS**

just as soon as the "green light" is given, is now appointing distributors . . . and processing dealer franchises. Complete details will be sent to you.

Are You Interested?

Write today! Give details. Describe your pre-war, present and planned postwar facilities.

All replies will be treated in strict confidence. Our present Distributors and Franchise-holders know of this advertisement.

— WRITE TODAY —

**BOX F 171 — RADIO SERVICE DEALER
342 Madison Ave., New York 17, N. Y.**

Crystal and Dynamic MICROPHONES

PHONOGRAPH PICKUP ARMS
CARTRIDGES and RECORDING
HEADS

Known for efficiency, quality and durability. Available with proper priority ratings.



Manufacturing radio cable connectors, antennas, and special sound detection devices for wartime equipment.

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

In Trade

(Continued from page 9)

dividuals with initiative and imagination.

3. Recommending changes and modifications of unfavorable local rules and regulations—such as antiquated building codes, state or local trade barriers, and in general, all out-moded regulations which seem bad for the current needs of small businessmen.

Copies of this compendium of cooperation can be had from your local C.E.D. committee. There are 2,000 of them. Prime purpose of the "locals," as avowed by the announcement, "to stimulate the creation of new businesses and to help existing small businesses grow larger and stronger." Facts: There are 2 million business enterprises in this country, each with less than 100 employees average, as compared with only some 3,500 firms employing more than 1,000. So, in the aggregate, small businessmen may be the 'big problem' of the post-war era.



Ross D. Siragusa

Admiral's New Executives

Ross D. Siragusa, president of Admiral Corporation, Chicago, announces Richard A. Graver, formerly midwest regional manager, is made vice president in charge of the Radio Division.

Former vice president and radio plant manager J. B. Huarisa is elected executive vice president in charge of Production and Engineering.

Irwin Mendels is elected chairman of the Executive Committee. Formerly he was president of Radio Products Corp., Chicago, which was absorbed by Admiral.

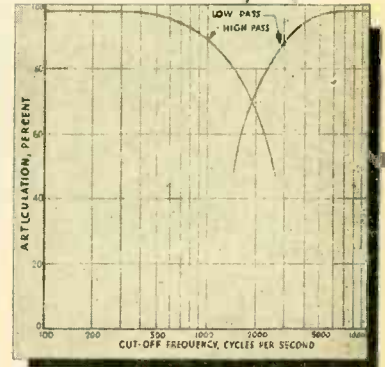
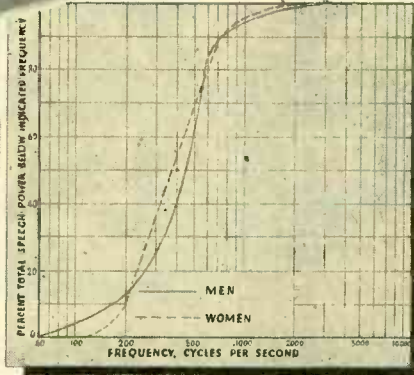
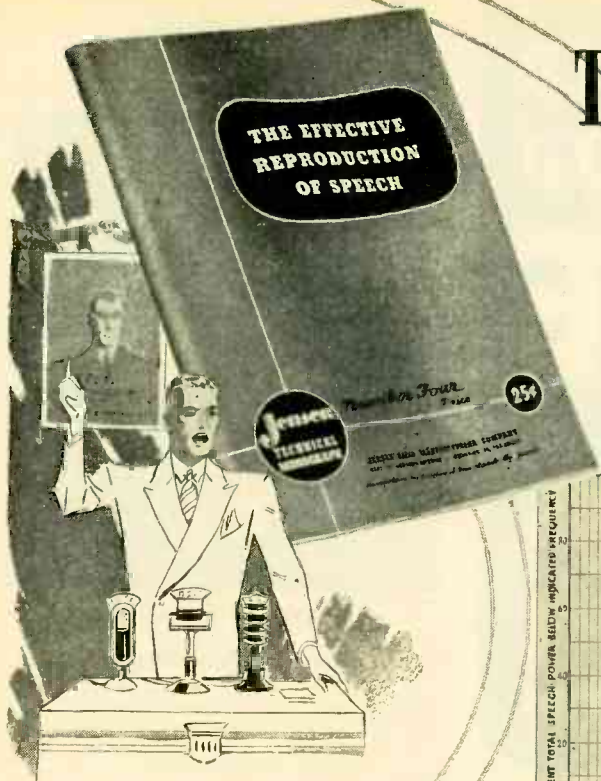
Clarence S. Tay, for the past twelve years Chicago Branch Manager of the Crosley Corporation, has been appointed Manager of Appliance Distributors, Inc., Chicago Branch of Admiral Corporation.

Dale Distributing Company, distributors for Admiral Radio, will also handle the company's refrigerators, electric ranges and home freezers for the trading areas in New York City, Hartford, Conn., and Newark, N. J. Mr. Maurice S. Despres, president of Dale, is also a director of the Admiral Corporation.

(Continued on page 12)

Radio Service Dealer

THE EFFECTIVE REPRODUCTION OF SPEECH...



When casually considered, the reproduction of speech may appear to present less exacting requirements than the reproduction of music. Yet faithful speech reproduction requires a frequency band almost as wide as for music. Amplified speech for strictly communication purposes usually presents a different requirement. Here, such matters as articulation, loudness, masking, power requirements and the ability to deliver the message through noise, become the more important considerations.

"The Effective Reproduction of Speech"—Number 4 in the series of JENSEN Technical Monographs—presents much up-to-date data on this important subject in convenient form, together with useful conclusions and practical information for everyone interested in sound reproduction. Get your copy from your JENSEN jobber or dealer, or fill out the coupon and mail it with 25c for each copy ordered.

The Series So Far Issued

- No. 1. Loud Speaker Frequency-Response Measurements.
- No. 2. Impedance Matching and Power Distribution.
- No. 3. Frequency Range in Music Reproduction.
- No. 4. The Effective Reproduction of Speech.

FREE to men in the Armed Services, and to Technical Schools, Colleges and Libraries.



Jensen

RADIO MANUFACTURING COMPANY

6619 South Laramie Avenue

Chicago 38, Illinois

- Send me The Effective Reproduction of Speech.
 Frequency Range in Music Reproduction.
 Impedance Matching and Power Distribution.
 Loud Speaker Frequency-Response Measurements.
 (Check one or more. Send 25c for each book ordered.)

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



**DO 2 JOBS
IN THE TIME
NORMALLY
REQUIRED FOR
ONE!**

**GUARANTEED
TO SAVE YOU
TIME
ON 4 JOBS
OUT OF 5!**



A. A. CHIRARDI

**WHEN A SET COMES IN FOR
REPAIRS . . . turn to this big**

GHIRARDI book First—Not to your tester

Don't waste time on elaborate testing of every set that comes to you for repair! **FIRST** look up its model number in the big Trouble Case History of Chirardi's completely revised, greatly enlarged 3rd edition **RADIO TROUBLE-SHOOTER'S HANDBOOK**.

Four times out of five you'll find listed there not only the cause of the trouble—but **ALSO** the exact step-by-step directions for fixing it. You'll save a whole of a lot of time—and make a lot more money! For example, Serviceman Ralph E. Locke of Calais, Me., says "Chirardi's Handbook quickly gave me information I'd been looking for for two days and solved a tough job!"

"PAYS FOR ITSELF"

Herbert Perry of Denver says "Helped me the first evening I took it home—and the set it helped me fix paid for the book."

Over 400 pages of this big, 744-page manual-size book are filled to the brim with the Trouble Case Histories (common trouble symptoms, their causes and remedies) for over 4800 radio models of over 200 popular makes—practically every model in use today.

But this is just the beginning! There are hundreds of additional pages of priceless servicing information covering 74 **VITAL RADIO SERVICE SUBJECTS**. Each page is devoted to helping you repair more radios *easier* and *in less time*. Included is the most complete tube chart ever published anywhere, covering **EVERY** tube type; invaluable hints on substitution of tubes and other scarce parts; I-F alignment peaks for over 20,000 superhets; a big data section on I-F transformer troubles and dozens of graphs, charts, and data compilations.

Remember, Chirardi's **RADIO TROUBLE-SHOOTER'S HANDBOOK** is **NOT** a study book. It goes right to work for you the minutes it arrives. You simply turn to it when you want the answer to a servicing problem—and there are mighty few it won't help you solve!

ACT AT ONCE!

You cannot lose! Send coupon today! Use the book for 5 days. See for yourself how it speeds up your work. The cost is only \$5 (\$5.50 foreign)—**BUT**, if you are not more than satisfied, send it back and your money will be refunded cheerfully without question. Nothing could be fairer than this!

← SPECIAL MONEY-SAVING COMBINATION

Have
**COMPLETE
Service Data**

at Your Fingertips

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In Trade
(from page 10)



Clifford J. Hunt

Stromberg-Carlson Distribution

Clifford J. Hunt, manager of radio sales, Stromberg-Carlson Company, announces the addition of the following distributors for radio, F-M and television lines: Roden Electrical Supply Co., Knoxville, Tenn.; Spokane Paper & Stationery Co., Spokane, Wash.; H. D. Taylor Co., Buffalo, N. Y.; Motor Supply Co., of Phoenix, Arizona; and the Grand Rapids (Mich.) branch of Radio Distributing Co. of Detroit.

Crosley Appointments

J. H. Rasmussen, commercial manager, The Crosley Corp., Cincinnati, announces appointment of E. A. Bonneville as regional manager. He was formerly vice-president in charge of the appliance dealer division of Times Appliance Co., a branch of the Graybar Electric Co. of New York. Mr. Bonneville has specialized in merchandising household appliances in department stores, appliance syndicates and chains.

B. T. Roe, manager of distribution, and L. C. Truesdell, sales manager, announce addition of new jobbers: Woodward, Wight & Co., Ltd., in the New Orleans territory; The Miami Valley Distributing Co., Dayton, O., for the southwestern part of Ohio.

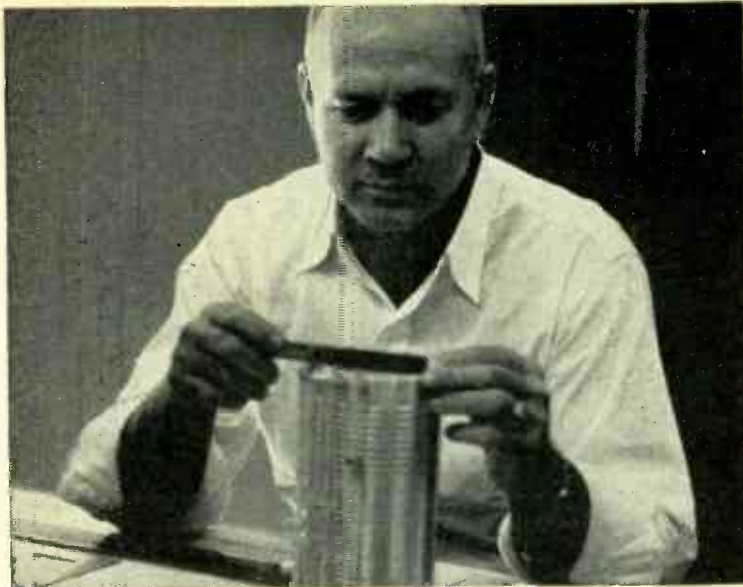
(Continued on page 31)



E. A. Bonneville

Radio Service Dealer

WHY PERSONNEL BECAME PRECISION-EL



As the fame of Meissner personnel began to spread, a new descriptive word came into being, rapidly caught hold. Precisely describing the ultimate in ability to do precision work, it is, naturally enough, "precision-el!"



A thousand miles from New York—200 or more from Chicago—is a little city where hundreds devote their working lives to electronics. They have developed exceptional facility, resourcefulness, and pride of workmanship. The city is Mt. Carmel, Illinois, and Meissner is its leading industry.



Pictured on this page are four of the many craftsmen who make Meissner synonymous with quality in the manufacture of a wide range of precision-built radio products. Conscientious, capable . . . they are your guarantee of lasting satisfaction.



Easy Way To "Step Up" Old Receivers!

Designed primarily as original parts in high-gain receivers, these Meissner Ferrocart I. F. Input and Output Transformers get top results in stepping up performance of today's well-worn receivers. Their special powdered iron core permits higher "Q" with resultant increase in selectivity and gain. All units double-tuned, with ceramic base, mica dielectric trimmers, thoroughly impregnated Litz wire, and shield with black crackle finish. Frequency range, 360-600. List price, \$2.20 each.

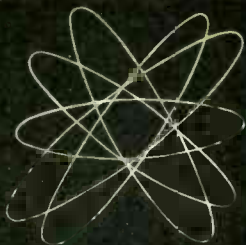


MEISSNER

MANUFACTURING COMPANY • MT. CARMEL, ILL.

ADVANCED ELECTRONIC RESEARCH AND MANUFACTURE

Export Division: 25 Warren St., New York; Cable: Simontrice



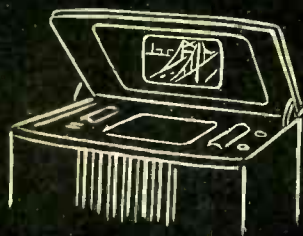
ELECTRONIC WELDING

Two G-E electronic tubes make resistance welding a high-speed precision process. The ignitron is the power tube, the thyatron the precision timer.



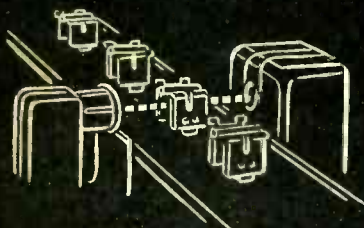
ELECTRONIC HEATING

The G-E pilotron tube supplies the high-frequency waves used in electronic heating. Small gears can be case-hardened in a few seconds!



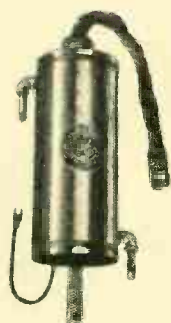
TELEVISION

The G-E cathode-ray tube is the picture tube in a television receiver. After the war, G.E. will produce these tubes at costs much lower than those for pre-war picture tubes.



ELECTRONIC COUNTING

The G-E phototube counts, sorts, controls—by electronics. It's one of the busiest and most useful tubes in modern industry.



HOW GENERAL ELECTRIC RIGHT NOW BUILDS NEW POST-WAR ELECTRONIC TUBE SALES FOR YOU

These G-E electronic tubes, which today are working miracles in war production, will be best sellers for you in the post-war era. General Electric is building this new, big market for you *right now!* . . . *Electronics Department, General Electric, Schenectady, N. Y.*

Tune in General Electric's "The World Today" and hear the news from the men who see it happen, every evening except Sunday at 6:45 E.W.T. over CBS. On Sunday evening listen to the G-E "All Girl Orchestra" at 10 E.W.T. over NBC.

THERE'S A G-E ELECTRONIC TUBE FOR EVERY PURPOSE

GENERAL  ELECTRIC

176-C5-9880

GET READY for BIGGER SALES

Dealers who are alive to changes and get plans set now will get lion's share of volume sales & profits.

NEW kinds of retailing are now being planned, and new methods of distribution from manufacturer to retailer. The dealer who thinks he can slip easily into the postwar period by merely letting more customers come in his door, and ordering more goods as he needs them, may be due for a rude awakening. Changes will not come as suddenly as an earthquake, but come they will.

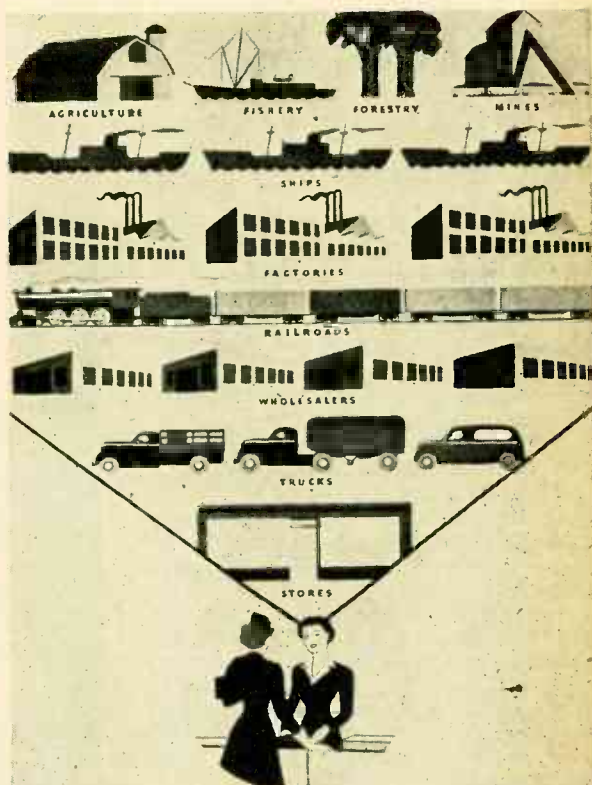
New kinds of stores are now being planned and when they are set up, they will be vigorous 1947 models. Reconversion, in retailing, begins with the dealer. It affects men rather than machines, though the changes in their ideas may change their stores too.*

The pull from new buying power in the public, together with the push from wholesalers and manufacturers, will demand aggressive selling. A case in point is the announcement that a new type electric iron will be launched by the manufacturer with the aid of an advertising "push" of big color ads to be run in leading popular weekly and women's magazines. All the leading (and up-and-coming) radio and appliance manufacturers are getting mass-attention for their products through extensive national consumer and trade advertising. And, recognizing this, national magazines are themselves launching educational advertising programs in trade magazines to tell retail dealers of the job they are doing in helping to get customers to come to the stores and shops of dealers who handle the advertised brands of radios and electrical home appliances.

Profits Ahead

Planning ahead for Christmas or Easter sales is familiar to every dealer, and no new principle is involved in laying plans to fit estimates of postwar

* How one dealer, now in the service, plans to get his share of the postwar radio and appliance business is told—by himself—in "GI-Joe Looks Ahead," page 30 of this issue. The above material is based on studies of the Committee for Economic Development.



All depends

... on the retail sale

demand. A program made now, based on estimated sales volume and covering every activity of the store, can be taken up and used as needed. It will cover both merchandise and personnel, though better post-war merchandise may arrive sooner than better postwar personnel.

The store that gives recognition to its own best people will make the best people want to work there. A plan that begins with proposals for doing familiar jobs better, will get more support than a plan that sounds complicated or unfamiliar.

"How can we plan now to sell more goods?" is a question that brings postwar planning down to earth. It sug-

gests action, not waiting—and implies plans that grow out of well-understood activities rather than a huge national blueprint. It is a plan made by the store, not a plan handed down to it from some general authority. The plan that is made will be drawn up by each store, depending on local conditions and customers. All these will differ from town to town and even from store store.*

New Goods—More Customers

Every family is within reach of a store, every store is reached by wholesalers, every wholesaler is reached by

(Continued on page 34)



9:30 A.M. and no grouching in this factory ... That's the merchandising theme developed by this dealer in selling P.A. installations. Note the overhead loudspeaker in the background.

By **ANDREW B. TAYLOR**

BEFORE the war Clark handled radios, appliances and musical instruments in his Syracuse shop. When the war came, he started an industrial sound department. Because he concentrates on the smaller factories and on local retail storekeepers for this business, his experiences may be of some interest to other radio service dealers who are located in war production areas.

This dealer's main problem is to get the ingredients—the mikes, amplifiers and speakers—in sufficient quantities to make the business pay out. This, Clark manages somehow—picking up odds and ends of equipment in a number of ways and from various sources. In some cases retail installations are for particular seasons, so the same equipment can be used time and again with new customers. In other words, there's a turnover of a given available supply of materials—and dealers know that it's turnover that makes the dollars come into the till to show real profits.

Clark finds it pays to go after small factories employing from say, ten to fifty persons. Such plants will not usually deal direct with manufacturers (as large establishments do), nor do they have sufficient personnel to handle the installation and servicing of p.a. systems themselves. Many of them prefer to trade with a local dealer also because they know that he can be reached immediately for any urgent servicing and repairs.

As far as retail merchants go, Clark offers more than just the installation of a p.a. system. The stores are analyzed as to the type of customers, the hours at which traffic is most brisk, and the time of day when sales clerks' efficiency is at lowest ebb. He then recommends the type of musical selections to be played over the p.a. hookup and the hours

PROMOTES INDUSTRIAL SOUND

Dealer promotes local plant and store P.A. installations by using worker and customer morale angle in his selling. Also rents records.



Typical public address unit is installed next to the works manager's office. This shows a four-network panel in the center compartment, and the attachment for playing records (bought outright or rented from the dealer) is directly over.

most suitable for certain recordings.

For example, a rather large local millinery store found that the busiest time was between ten and eleven-thirty in the morning.

So the playing of soft music was recommended, for ten minutes at a time, every half-hour to relax shoppers for the day's chores. Again, a grocery store's peak hours were found to be from four to six p.m. Customers were tired after a day's factory or housework. And for this store, Clark recommended that certain peppey march music be played for five minutes or so, three or four times during an hour.

This dealer has developed his p.a. business with a three-point service. He plans the p.a. system, recommends the types of recordings to be featured and also supplies the records from his own stocks. The records are rented for a few weeks at a time and are kept in circulation from store to store and factory to factory until the discs wear out.

Selling p.a. systems to retailers is based on the proven fact that when played at the proper moments, music stimulates weary clerks. The shoppers prefer to go to a store where they know they can anticipate relaxing for a few moments to music of their liking. This helps store traffic and develops—in the long run—more loyal customers.

As for small factories, Clark sells p.a. systems on the basis that the music broadcasts help workers morale (a fact proven time and again in the armed forces), besides offering a quick and direct means of interdepartmental communication throughout the plants. More efficient production is, naturally, a result.

Clark's field man visits retail merchants frequently, both to service and to sell. If a storekeeper has a p.a. system originally installed by Clark, the field man checks it, lays in a few new recordings and irons out any bugs reported. To encourage a sale to the more skeptical retailers, Clark may offer to install a p.a. system for a week's trial without obligation. Closings are effected in a satisfactory number of cases.

There is a good demand for p.a.'s now and according to Clark, there will be a far greater demand after the war ends. The point stressed at the present time with prospective customers is that many ex-employees will return to their store jobs, and that during their period of readjustment they may suffer from war-nerves. It will be easier to make their adjustment to civilian life, to wait on trade more efficiently after their war experiences, if they are exposed to regular doses of pre-selected musical recordings during their working day.

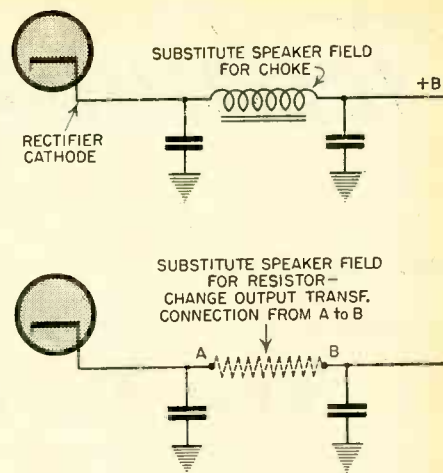


Figure 2.

- One 120 mil power transformer
- One .1 mfd condenser
- One toggle switch
- One 2000 ohm resistor
- One 4-prong plug or tube base
- One PM or 1000 ohm dyn (to replace 6 volt speaker).

You are now ready to go ahead, and here are the steps which I have found best for satisfactory conversions:

As shown in Fig. 1., remove vibrator and disconnect the center tap of the auto radio power transformer primary from the vibrator socket and tape it up. It is not used.

Mount the power transformer on the cover of the radio with leads inside. Cut the high voltage leads short and tape them so they will not short. Connect the 5-volt and 6-volt windings in series to give 11 volts. Extend the leads and solder to the plug, using pins that connect to the remaining auto transformer pt primary. Extend two wires from the original 6-volt winding to the other pins on the plug. Connect a .1 condenser from a-c line to ground and wire the switch in the 110-volt line.

If the speaker is a PM type the set is now ready to play. I connect the 2000-ohm resistor aerial to ground for smoother reception, using about 20 feet of antenna. But if a longer antenna is needed, a two plate trimmer, backed off a turn or two, prevents overloading without too much hiss or frying on weak stations. If center tap on auto radio pt primary did not connect to socket of vibrator, connection from where it was removed should be carried to the unused socket prong.

To use a 1000-ohm field disconnect filter choke in radio and connect field to these leads. Or if resistors are used for filter (as in late model radios) remove resistor and substitute field, as shown in Figure 2, changing output transformer connection so that the output plate current will go through field.

The auto radio switch can be used as the power switch, but all connections must be removed from the switch and soldered together and taped.

Generally, the above method can be used with all types of auto radios. But synchronous vibrator sets are a little more complicated as they require the addition of a rectifier tube and socket. I have found that a 6x5 is better than an OZ4 in a home radio, but either one works satisfactorily in the sets for which they are designed.

HOW TO CONVERT

AUTO-RADIOS TO HOME SETS

By **BOB SIMMONS***

I HAVE been a radio service dealer for fifteen years and take some exception to a statement made in a recent issue of RADIO SERVICE DEALER about how auto radios can be converted for use in homes. In my experience, the average auto radio with a non-synchronous vibrator is one of the easiest conversion jobs, but it must be done right.

In my practice I have found that proper conversion of auto radios for home use calls for the following materials:

* Simmons Radio Service, Santa Paula, Calif.

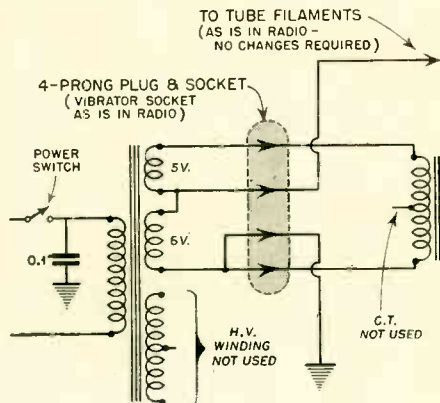


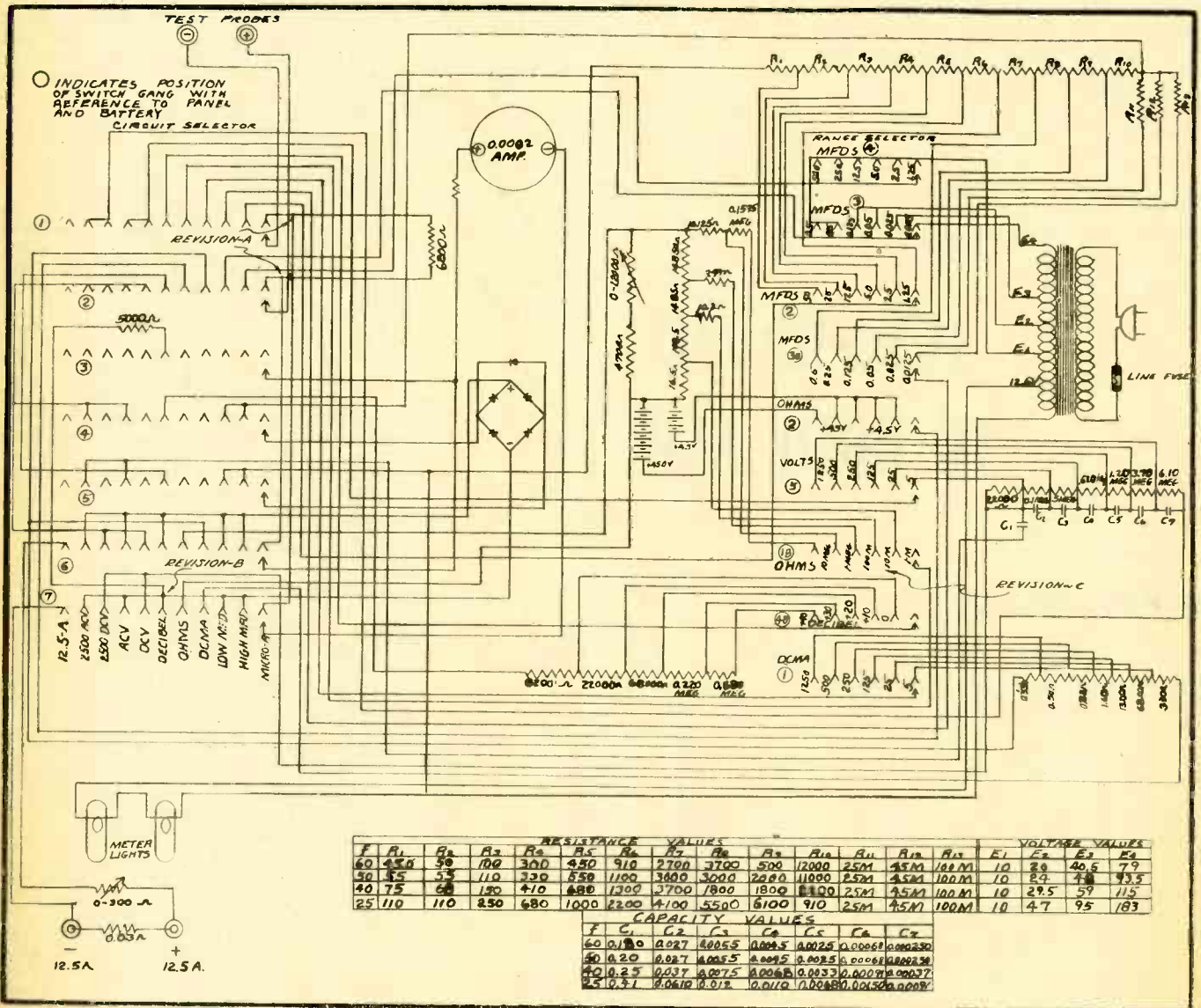
Figure 1.

Technical Service Portfolio

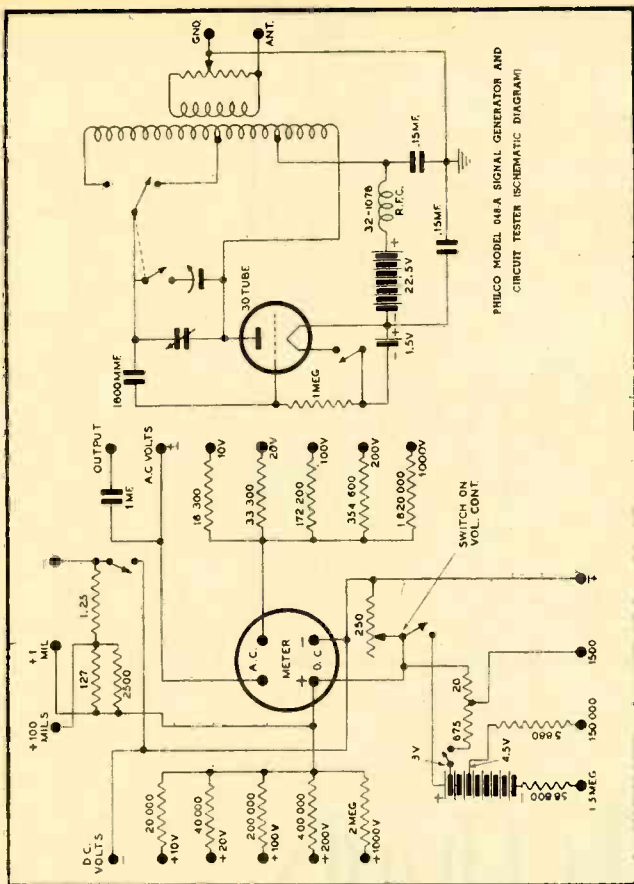
SECTION XLII

TEST EQUIPMENT CIRCUITS—Part 2

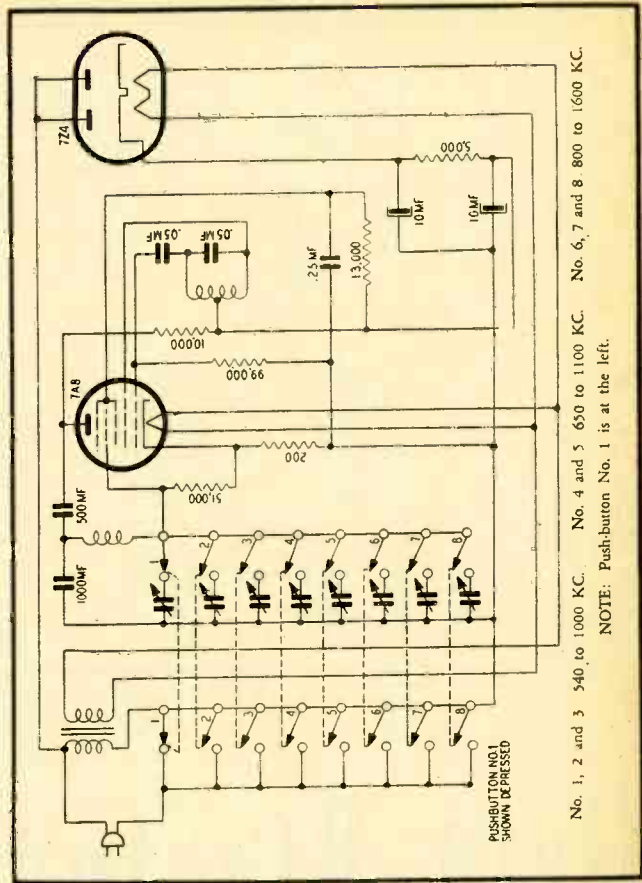
Through the cooperation of test equipment manufacturers we are publishing a series of hitherto unavailable schematics of their instruments. The circuit diagrams will be published without technical comment in a series of "Portfolios" of which this is a part. Subscribers desiring publication of circuits for specific instruments should write to Editor, Radio Service Dealer, for issue priority.



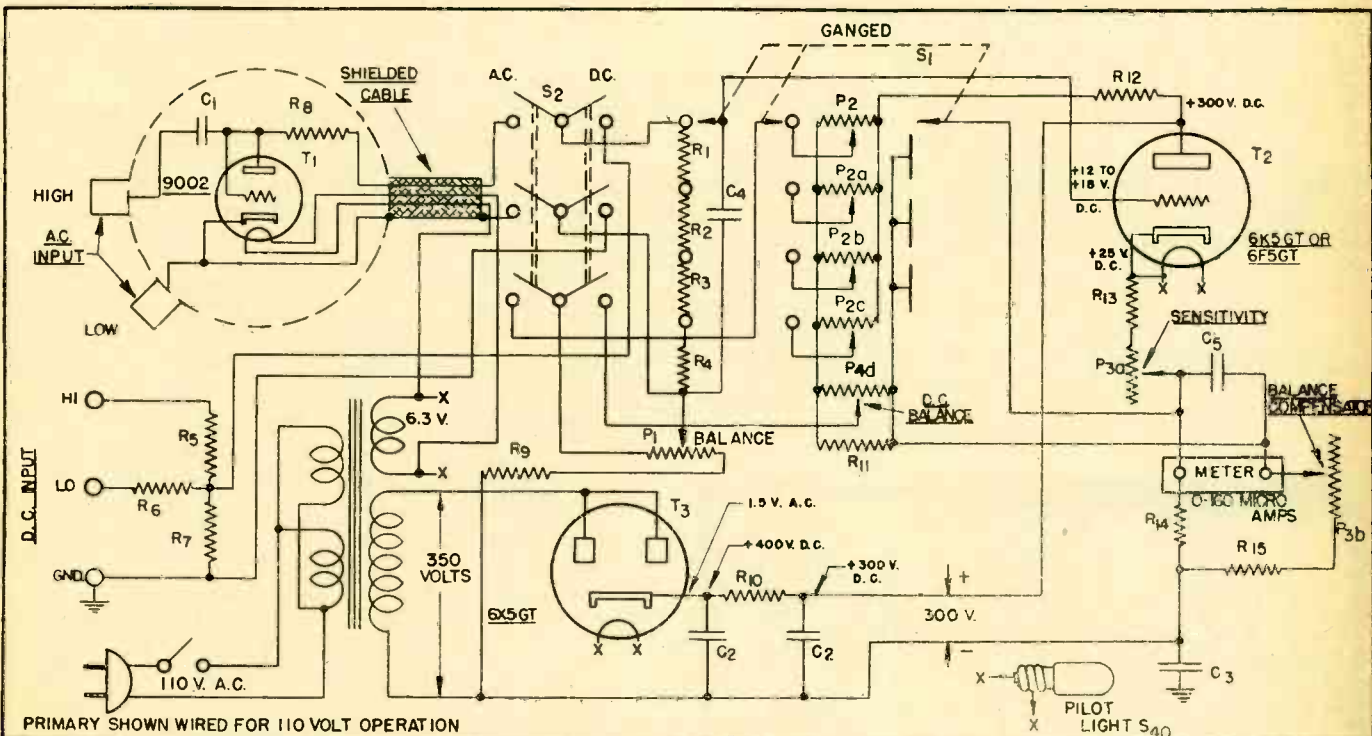
Supreme Instruments Corp. Multimeter (Model 590 Deluxe).



Philco Signal Generator & Circuit Tester (Model 048-A).



Philco Wireless Station Setter (Model 014).



PRIMARY SHOWN WIRED FOR 110 VOLT OPERATION

R1 7.5 MΩ	1/2 WATT	R10 7500 Ω	1 WATT	M = MEGOHM	P4 250~	TUBE BASES	BOTTOM VIEW
R2 6 MΩ	1/2 WATT	R11 150 Ω	1/2 WATT	K = THOUSAND OHMS	C1 .025 MF	9002	
R3 135 MΩ	1/2 WATT	R12 30 K	10 WATT	R1, R2, R3 & R4 = 1%	C2 20 MF 450V	6X5GT	
R4 .15 MΩ	1/2 WATT	R13 7.5 KΩ	1/2 WATT	R6, R7 ADJUSTED IN PRODUCTION	C3 1 MF	9002	
R5 700 MΩ	CERAMIC	R14 30 KΩ	1/2 WATT	P1 50 KΩ	C4 .01 MF		
R6 5 MΩ	1/2 WATT	R15 1200~	1/2 WATT	P2 1 KΩ (WIRE WOUND) A.C. BALANCE	C5 10 MF 25V		
R7 23 MΩ	1/2 WATT			P3 3 KΩ (WIRE WOUND)			
R8 1 MΩ	1/2 WATT						
R9 .5 MΩ	1/2 WATT						

ALL VOLTAGE MEASUREMENTS MADE WITH V.T. VM. NOT 1000 OHM PER VOLT METER

Hickok Electrical Instrument Co. Vacuum Tube Voltmeter (Model 110A).

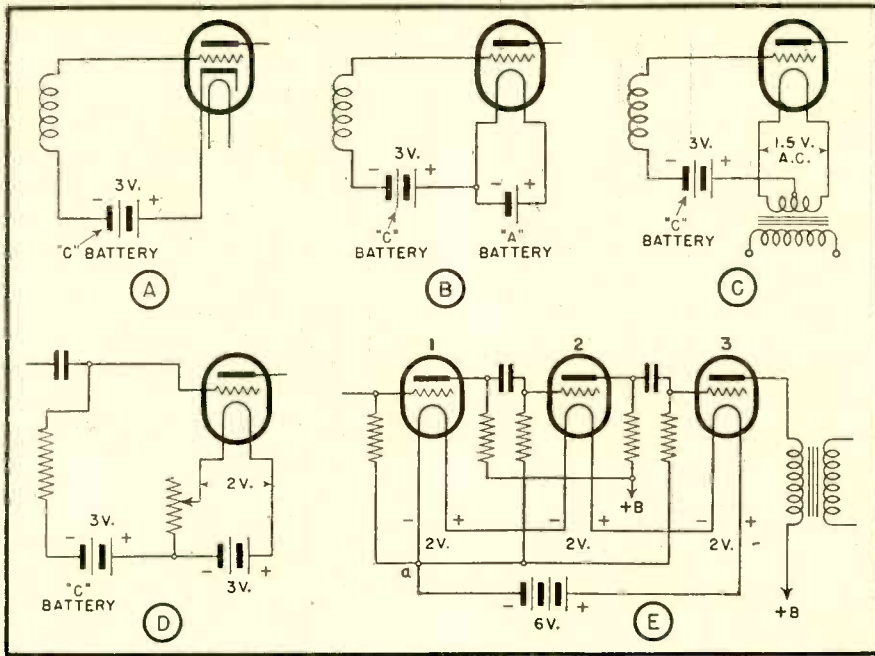


Figure 1

Grid Biasing Methods

Analyzing various methods of applying bias voltages in modern radio receivers.

by JAMES PARKER

THERE are more ways of applying grid bias than of any other voltage used in radio receiver systems. Often several methods are employed in a single receiver circuit, with the result that checking of schematic diagrams becomes a rather complicated operation. In some circuits the bias voltage is fixed and is derived from batteries or from bleeder resistors in the power sup-

ply, while in others bias voltage is developed by the rectified signal, or more simply by the electron emission of a tube.

In some cases the bias voltage cir-

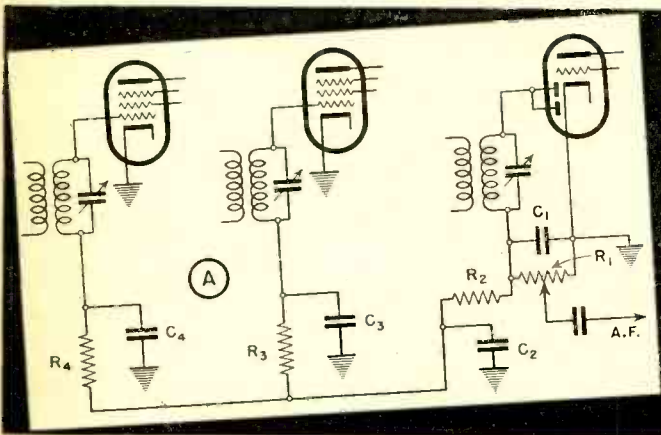


Figure 3

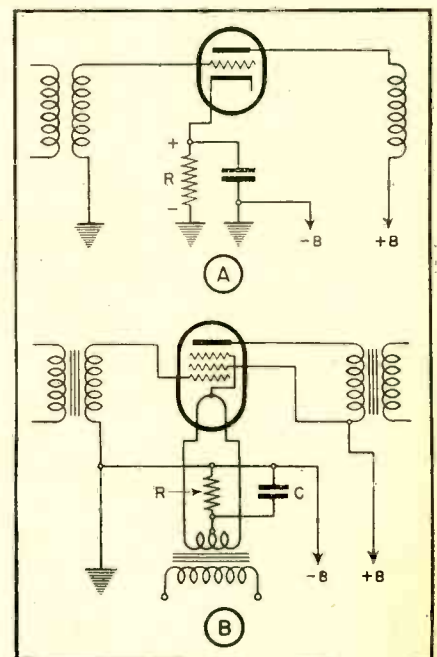


Figure 2

cuits are of low resistance and relatively easy to check, but in automatic volume control and similar circuits employing high resistances, the testing of these voltages requires special attention.

Battery-operated Receivers

Bias voltages in battery-operated receivers are simplest of all, but even these must be analyzed with care. Some of the commonly used battery biasing methods are shown in *Figure 1*. In *Figure 1a*, the *C* battery is in series with the cathode and grid and there are no difficulties in anal-

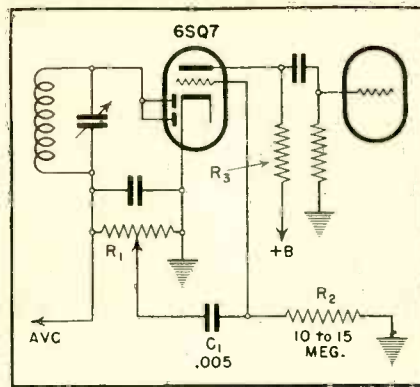


Figure 4

fier for noise as well as signal voltages and the rectified current passing through *R1* causes a voltage drop which may be applied to the preceding tubes. Because it is important that no signal voltage be applied to the controlled tubes, resistance and capacity filters are used, represented by *R2-C2*, *R3-C3*, and *R4-C4*.

Contact Potential

In audio systems 'contact potential' developed as a result of electron bombardment is often used for biasing purposes. A typical circuit is shown in *Figure 4*. In this illustration, *R2* is made of very high resistance—of the order of 10 to 15 megohms, in order to limit the amount of grid current in the circuit over the positive half of the signal wave.

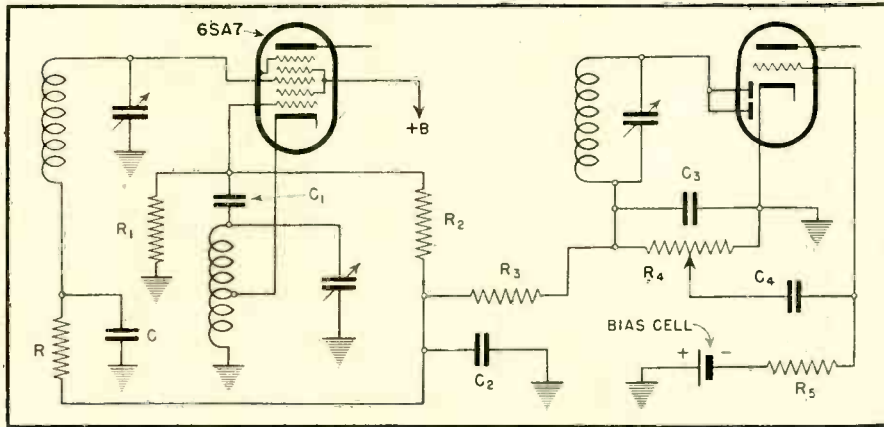
An unusual method of applying grid bias which is used in some of the smaller midget receivers is shown in *Figure 5*. Here the voltage developed in the oscillator section of the pentagrid converter is divided by the resistors *R2*, *R3*, and *R4*; and that voltage existing at the junction of *R2* and *R3* is used to furnish a negative bias voltage to the signal grid of the 6SA7.

Semi-fixed Bias

In *Figure 6* is shown a method of obtaining semi-fixed bias by using a divider across the filter choke in the negative leg of the power supply. This voltage is applied to the grid of the 6J5. The total voltage is applied through *R3* and *C2* to the grid of the output tube. Because the greatest portion of the total plate current is developed in the 2A3, this remains substantially constant whether or not a signal is received. This method of applying grid bias is called semi-fixed bias.

The foregoing systems are in general use in all broadcast receivers. The methods of measuring these voltages with precautions that must be observed, and the equipment required, will be discussed in another article.

Figure 5



yzing the circuit. In *Figure 1b*, the situation is similar, but instead of connecting to the cathode, the positive terminal of the bias battery is tied to one terminal of the filament. In *Figure 1c*, on the other hand, the grid returns to a center tap on a transformer. In this case the actual bias voltage is equal to the battery bias plus one-half of the applied alternating voltage. When a rheostat is used in series with one terminal of the tube filament the voltage drop across the series resistor adds to the bias applied to the tube. This is illustrated in *Figure 1d*.

When tube filaments are connected in series the bias is a little more complex. In *Figure 1e*, for example, the bias applied to the first tube is zero. The bias applied to the second tube is minus two volts, and the negative bias on the third tube is four volts.

Line-Operated Receivers

Of course, most receivers used in homes are operated from power lines and the most common methods of attaining bias in such receivers is by utilizing the voltage drop across a resistor in the cathode circuit, as shown in *Figure 2a*. When the tube has no cathode, the bias resistor is placed in series with a lead connecting to the center tap on the filament supply transformer. Because the plate current must return to the

cathode through the bias resistor, a voltage drop results which is of the right direction to apply negative bias to the grid of the tube. This is illustrated in *Figure 2b*.

In the circuits we have just discussed the bias voltage is derived from a low-resistance circuit, either a battery or from a series resistor. Often, in modern receivers the control voltage developed in avc systems is used for bias purposes. This is illustrated in *Figure 3*. Thus, when no signal is being received there is a certain amount of noise voltage which, when rectified by the receiver detector, can be used for biasing purposes. In *Figure 3*, for example, the diode detector serves as a recti-

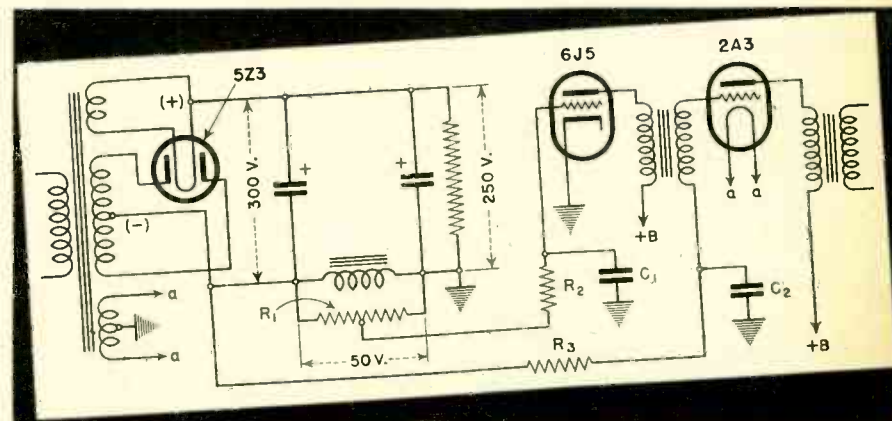


Figure 6

NEW TYPE

SYLVANIA

TUBES

by **ENGINEERING DEPARTMENT**
Sylvania Electrical Products, Inc.

Details and circuit applications of new voltage regulator, high-frequency twin triode and radio-frequency amplifier pentode tubes.

SERVICE dealers should become acquainted with these three new tubes. Type OC3/VR105 offers a practically constant internal voltage drop across which a load requiring good voltage regulation may be connected. Type 6J6 is a miniature low capacity twin-triode designed for use at ultra-high-frequencies and which can also be used as a mixer. Type 1L4 is designed for radio frequency or intermediate frequency amplifier service in portable equipment.

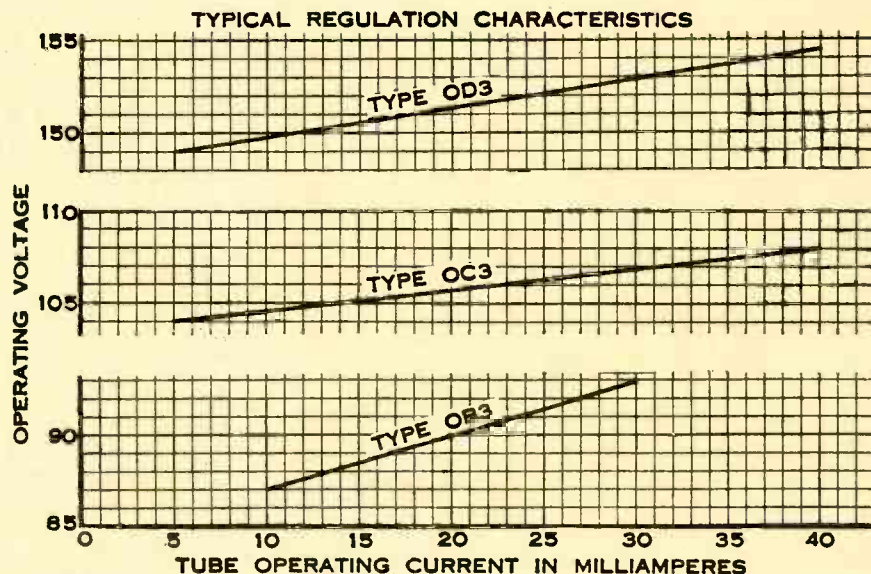
Details of the specifications, operating characteristics and circuit applications of each of the types are given below:

Circuit Application

Sylvania Type OC3/VR105 is a gas filled, cold cathode voltage regulator. It is characterized by a practically constant internal voltage drop across which a load requiring good voltage regulation may be connected.

The OC3/VR105 is mounted in an ST-12 bulb with a standard small, 6-pin octal base. The outside, cylindrical electrode is the cathode and is connected to base pin No. 2. The inner electrode is the anode and is connected to pin No. 5. The jumper within the base serves as a switch to open the power supply circuit when the regulator tube is removed from its socket, providing the proper socket connections are employed.

A current limiting resistor should always be used in series with the



Curves showing typical regulation characteristics of 3 regulator tubes for comparison with new tubes.

OC3/VR105 and the supply voltage. The amount of current drawn by the load will of course determine the size of this resistor, but it should be such as never to allow an operating current of more than 40 milliamperes

to flow through the OC3/VR105 in case the load is disconnected.

To start the tube operating some definite d-c voltage must be applied to ionize the gas in the tube. This voltage is approximately 115 volts

R-F AMPLIFIER PENTODE TYPE 1L4

Physical Specifications

Style Miniature
Bulb T-5 1/2
Diameter 3/4" Max.
Overall Length 2 1/8" Max.
Seated Height 1 7/8" Max.
Mounting Position Any

Pin Connections

Pin 1 Neg. Fil. Sup. and Internal Shield
Pin 2 Plate
Pin 3 Screen Grid
Pin 4 No Connection
Pin 5 Neg. Fil. Sup. and Internal Shield
Pin 6 Grid
Pin 7 Pos. Filament
Basing 6AR-O-1&5

Ratings and Characteristics

Maximum Filament Voltage:
D-C Battery Operation—must never exceed 1.6 Volts
AC/DC Power Line Operation—design center 1.3 Volts
Maximum Plate Voltage 110 Volts

Maximum Screen Voltage ... 90 Volts
Maximum Total Cathode Current 6.5 Ma.
Minimum Grid Bias Voltage. 0 Volt

Direct Interelectrode Capacitances*
Grid to Plate 0.010 μ mf. Max.
Input 3.6 μ mf.
Output 7.5 μ mf.

*With no external shielding.

Operating Conditions and Characteristics

Filament Voltage
D. C. 1.4 1.4 Volts
Filament Current 0.050 0.050 Ampere
Plate Voltage .. 90 90 Volts
Screen Voltage.. 67.5 90 Volts
Grid Voltage ... 0 0 Volt
Plate Resistance 0.6 0.35 Megohm
Trans-conductance .. 925 1025
Plate Current .. 2.9 4.5 Ma.
Screen Current . 1.2 2.0 Ma.
Grid Bias for 1b = 10 μ amp ... -6.0 -8.0 Volts

VOLTAGE REGULATOR TYPE OC3/VR105

Physical Specifications

Style	Glass
Base	Small Octal 6-Pin
Bulb	ST-12
Diameter	1 1/16" Max.
Overall Length	4 1/8" Max.
Seated Height	3 9/16" Max.

Base Pin Connections

Pin 1	No Connection
Pin 2	Cathode
Pin 3	Jumper
Pin 4	Omitted
Pin 5	Anode
Pin 6	Omitted
Pin 7	Jumper
Pin 8	No Connection

Characteristics

Starting Supply Voltage	127 Volts Min.
Operating Voltage (Design Center)	105 volts
Operating Current Range*	5 Ma. Min. 40 Ma. Max.

Regulation over Operating Current Range†	4 Volts Max.
Max. Peak Current—5 to 10 sec. starting cycle	100 Ma.

* Adequate resistance required in series with tube to limit tube current to 40 ma.

† See Circuit Application.

but should never require more than 127 volts. Once started, the tube continues to operate at some voltage within the operating range of 105 to 112 volts. The operating voltage will also be dependent upon the current passing through the tube, generally being several volts higher at 40 milliamperes than at 5 milliamperes. This difference in operating voltage on any particular tube is a measure of the regulation for that tube.

The maximum regulation is 4 volts

over the operating current range. On an ideal tube the regulation would have a zero slope and the operating voltage would be constant over the operating current range. This condition is rarely obtained in actual practice. The regulation tends to improve during the life of a tube. It is important to note that individual tubes may not deliver identical voltages to the load. Nevertheless, the voltage should always be within the specified limits for operating voltage and the regulation will

HIGH-FREQUENCY TWIN TRIODE TYPE 6J6

Physical Specifications

Style	Miniature
Bulb	T-5 1/2
Diameter	3/4" Max.
Overall Length	2 1/8" Max.
Seated Height	1 7/8" Max.
Mounting Position	Any

Pin Connections

Pin 1	Plate T2
Pin 2	Plate T1
Pin 3	Heater
Pin 4	Heater
Pin 5	Grid T1
Pin 6	Grid T2
Pin 7	Cathode
Basing	7BF-0-0

Ratings and Characteristics

Heater Voltage	6.3 volts
Heater Current450 Ampere
Maximum Plate Voltage	300 Volts
Maximum Plate Dissipation (per plate)	1.5 Watts
Maximum Grid Resistor (self bias connection)5 Megohm
Heater Cathode Voltage (Max.)	90 Volts

Direct Interelectrode Capacitances:*

Grid to Plate	1.6 μ f.
---------------------	--------------

* Each unit—with no external shield, other section grounded.

Grid to Cathode	2.2 μ f.
Plate to Cathode	0.4 μ f.

Operating Conditions and Characteristics

	Class A A-F Amplifier	Class C Telegraphy R-F Oscillator and Power Amp.
Plate Voltage	100 Volts	300
Amplification Factor	38	
Plate Resistance	7100 Ohms	
Transconductance	5300 μ mhos.	
Plate Current (per plate)	8.5 Ma.	8.0 Max. Ma.
Grid Voltage (50 Ohms cathode bias—both sections used) Note (1)		
D-C Plate Current (per plate)	15 Max. Ma.	
D-C Grid Current (per grid)	8.0 Max. Ma.	
D-C Plate Input (per plate)	4.5 Max. Watts	
Driving Power (Approx.)	0.35 Watts	
Power Output (Approx) (see circuit application)	3.5 Watts	
Note (1) Normal value—10 volts, obtained from 220 ohm cathode resistor, 625 ohm grid resistor or fixed supply. Maximum value—40 volts.		

be 4 volts or less.

Two or more OC3/VR105 tubes may be connected in series to obtain higher voltages which are multiples of the drop for a single tube. Voltage taps may be taken from the junction points of the regulator tubes.

Circuit Application

Sylvania Type 6J6 is a miniature low capacity twin-triode designed particularly for use at ultra-high-frequencies. Its small size and high efficiency make it particularly useful in compact, light weight portable equipment.

The 3.5 watts output rates above may be obtained at moderate frequencies decreasing at higher frequencies, but at 250 Mc. the output is still 1.0 watt as a push-pull oscillator with a plate voltage of 150 volts and a grid resistor of 2000 ohms common to both units.

This tube may also be used as a mixer at frequencies up to 600 megacycles.

Circuit Application

Sylvania Type 1L4 is an RF-IF sharp cutoff pentode of the miniature style of construction. It is especially designed for radio frequency or intermediate frequency amplifier service in compact, light weight, portable equipment. The high operating efficiency allows the tube to be used with extremely low B supply voltages. The construction incorporates internal shielding which is connected to minus filament, and eliminates the need for an external bulb shield in most applications. A shielded socket should be employed to obtain the minimum grid-plate capacity. The circuit applications are the same as those for Sylvania Types 1L4C5 and 1N5GT/G.



New Communications Mike

Electro-Voice Corporation announces the placing on the market of model 600-D, a microphone designed for police, airport, utility mobile communications and portable public address installations.

Features: "press-to-talk" switch, which opens the microphone and closes the relay in one operation.

The MULTI-TESTER

by OSCAR E. CARLSON

HOW multi-range meters are designed, constructed & operated.

PART 2

If measurements of potential are to be made across a source of limited voltage, as when measuring the voltage drop across a resistor which has a small current flowing through it, the resistance per volt of the voltmeter combination should be such that when it is placed across the resistor in the circuit it does not appreciably lower the resultant circuit resistance. The meter and series resistor act as a shunt across the portion of the circuit where connected thus tending to cause more current to flow. Figure 12 illustrates the circuit for such a condition. If E is a fixed potential, placing the meter across R_2 causes the effective resistance across E to become

$$R_1 + \frac{R_2 R_s}{R_2 + R_s}$$

so that more current flows through R_1 resulting in a greater drop across R_1 and less across R_2 . Consequently the meter will register a false value of voltage due to the circuit disturbance caused by the meter and multiplier resistance. This can be overcome to some extent by using the voltmeter on a higher voltage scale so that the effective circuit loading will be less.

However, for some circuit conditions the voltmeter arrangements of a milliammeter and series resistor

are useless for measurements. This is true for example, in any circuit where the current flowing is very slight, since the voltmeter combination measures voltage by borrowing current when connected as one leg of a parallel circuit. If the meter requires more current than is flowing through the load across which the voltage is to be measured the measurement is useless. Under such conditions, it is better to insert the meter in series and compute the voltage by Ohm's law.

RESISTANCE MEASUREMENTS

Returning again to Ohm's law we find $R = E/I$. If a current-indicating meter is inserted in series with a load resistor across some source of potential we have a circuit as shown in Figure 11. If the voltage is known and we measure the current we can compute the value of resistance by applying Ohm's law. But, suppose we keep the voltage constant and measure the current. The resistance is inversely proportional to the current and the meter may be calibrated in ohms for any given current flow from that constant voltage source. A battery with low current drain imposed upon it may be considered as a source of constant potential.

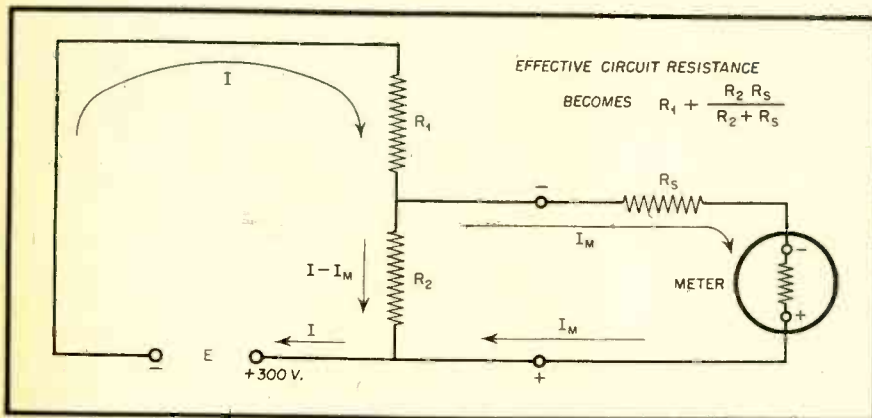


Figure 12

A 0 to 1 milliamper meter connected as in Figure 13 will measure resistance value of R_x as indicated by the calibration curve of that figure. The measured resistance R_x is found by:

$$(4) \quad R_x = E/I - (R_s + R_m)$$

where R_s is the value needed to cause full scale deflection with R_x equal to zero. R_m is in this case the internal meter resistance.

As may be seen from the calibration curve in Figure 13, very small resistance values are not readily read by this method and neither are very high resistance values. A higher resistance range may be incorporated by increasing both the voltage and the value of the zero adjusting resistor. The value of the zero adjusting resistance should be such that its variation will "zero" the meter over only a small variation of battery voltage, since the meter is accurately calibrated for only one setting of this resistor.

It is to be noted about the circuit in Figure 13 that zero value of R_x causes meter to read full scale while open circuit of R_x causes no meter deflection.

Since the above method of introducing resistance to be measured in series with the meter is not readily usable for very low resistance values, another method may be employed. Figure 14 illustrates a circuit for such measurements together with a calibration curve for a 0 to 1 milliamper meter having 30 ohms resistance. This arrangement measures infinite resistance when the meter reads full scale deflection and is "zeroed" with test leads open-circuited. Since the current flowing through the circuit is largely determined by R_s which is 150 times greater than the meter resistance, a shunt of any magnitude across the meter does not appreciably alter the current drain upon the battery. With the meter shorted there is no voltage across it, and total current flows through the short circuit. With R_x an open circuit there will be .03 volts across the meter for full scale deflection. The meter is used as a voltmeter. The unknown resistance bypasses current around the meter, causing more current to flow from the battery which in turn causes a larger voltage drop across R_s , with less voltage across the meter.

The computing of R_x for any given value of current through the meter is more complicated than for the circuit in Figure 13. The voltage of the battery is impressed upon the circuit so that

$$E_b = IR_s + I_m R_m$$

and since the voltage is the same across R_x as across the meter,

$$E_b = IR_s + I_x R_x$$

and we know also that total current is equal to sum of the currents in the parallel branches, thus:

$$I_t = I_x + I_m$$

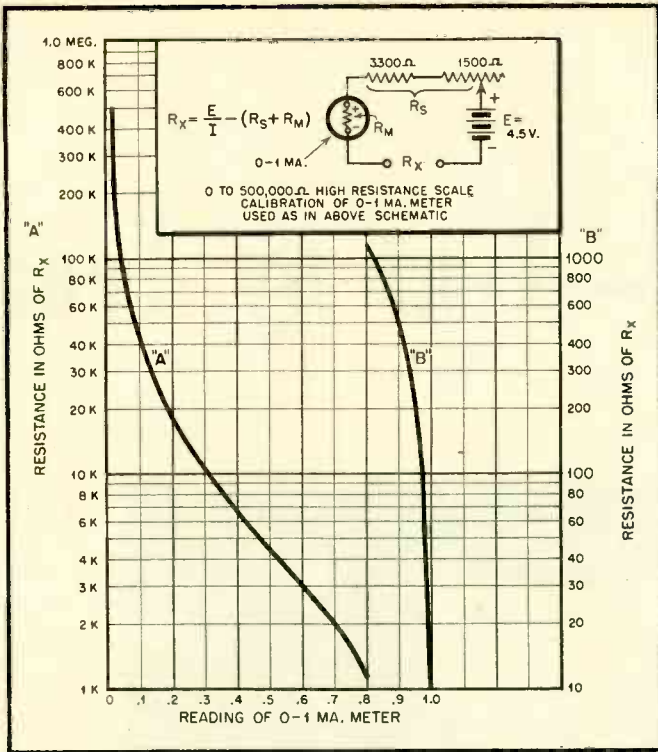


Figure 13

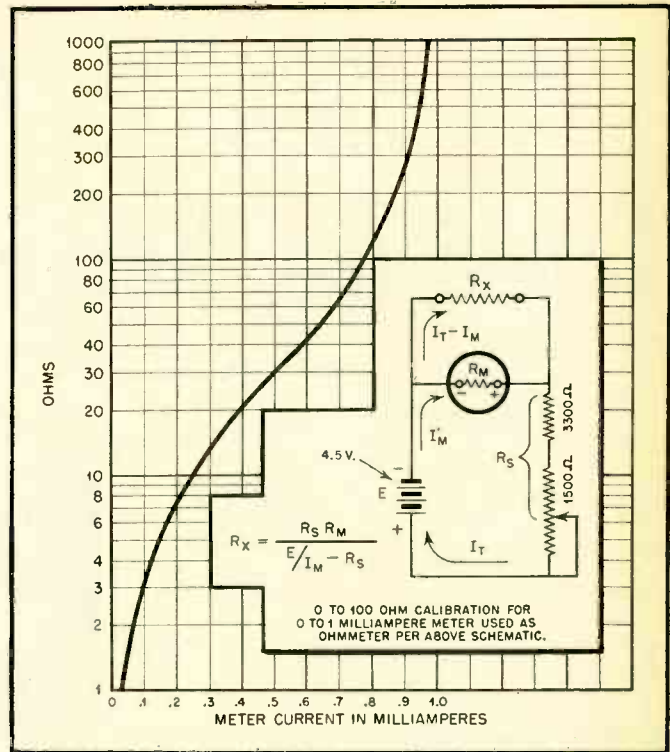


Figure 14

then the value of R_x is:

$$R_x = \frac{E_b - IR_s}{I_x}$$

and:

$$R_x = \frac{E_b - IR_s}{I_t - I_m} = \frac{I_m R_m}{I_x} = \frac{I_m R_m}{I_t - I_m}$$

which is equal to:

$$\frac{R_s R_m I_m}{E_b - R_m I_m - R_s I_m}$$

$$R_x \text{ is thus equal to: } \frac{R_s R_m I_m}{E_b - R_m I_m - R_s I_m}$$

But since $R_m + R_s$ is nearly equal to R_s due to R_s being much greater than R_m , we may simplify the above formula to:

$$(5) \quad R_x = \frac{R_s R_m}{E_b/I_m - R_s}$$

where: R_x is unknown resistance
 R_s is value of series resistance for zero adjustment
 E_b is battery voltage
 I_m is meter reading in amperes.

The circuit in Figure 14 may be modified as in Figure 15 in which a resistor, R_a , has been used to increase the voltage drop across R_x for full scale meter deflection. For such an arrangement the value of R_x may be found by the following formula:

$$(6) \quad R_x = \frac{R_s (R_m + R_a)}{E/I_m - R_s}$$

A calibration curve for such an arrangement may readily be made up with three-cycle semi-log paper as

used for the calibration curve in Figure 14.

IMPROVED SHUNT METHOD FOR CURRENT MEASURING

Now that we have seen how to make our elementary meter perform the varied functions of measuring voltage, current and resistance, let us elaborate on some methods. In designing the multi-range milliampere circuits for a multi-tester we can combine the knowledge we have gained regarding shunts and multipliers.

From Figure 15 we see that a resistor in series with the meter made it a 0 to 100 milli-volt volt-meter when it was fundamentally a 0 to 30 milli-volt meter. The shunt, R_x , then increased the required current for full scale deflection. Suppose in constructing a circuit we adopt the principle of Figure 16. In that figure, as we decrease the shunt across

our test circuit, the value of series resistance becomes progressively R_a , $R_a + R_1$, $R_a + R_1 + R_2$, etc. This is a type of "universal" shunt. The arrangement allows us to utilize higher resistance values and thus tends to eliminate the effect of contact resistance due to switching contacts. It also allows the circuit to be switched while the meter is still in the circuit which is not possible with the common shunt shown in Figure 10. In Figure 10, opening of the switch between contacts would allow full current to flow through the meter.

In the "universal" shunt, formula (1) is used to compute shunt resistance for the lowest required range. The R_m to be used is the actual meter resistance plus R_a in Figure 16. The other shunts are then tapped off the shunt for the lowest range and computed as follows:
 (7).

$$R_n = \frac{R_{sh} + R_m}{\text{New Range/Fundamental Range}}$$

(Continued on page 40)

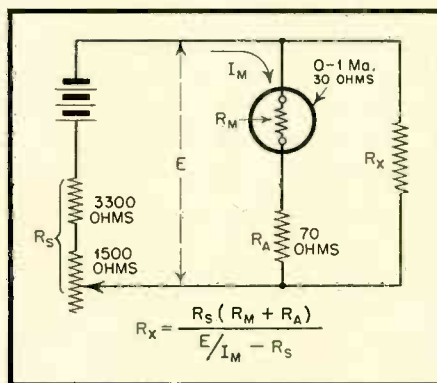


Figure 15

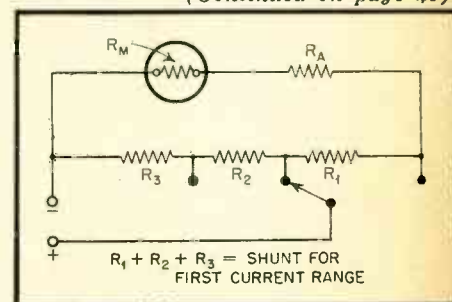


Figure 16

Television Survey—Year by Year

by **LEWIS C. STONE**
Managing Editor

8 million wired homes reached by telecast now, but only 50 thousand persons in area view video programs. Yearly growth analyzed city-by-city.



Sales Prospects

Recent surveys have shown that the public definitely expects and wants television.

1. In the survey conducted by Newsweek Magazine, over 32 per cent declared they would be in the market for television home receivers, ranking second only to autos.
2. Television was first among members of the post-war savings plan inaugurated by the Franklin Square National Bank of Franklin Square, Long Island. Of the post-war products for which depositors have earmarked their accounts, television receivers headed the list, with cars second and electric washers third.
3. In another survey made by McCall's Magazine, in the form of a contest, the editors said the results showed that over two-thirds of all contestants were television home instrument prospects.

**In 1 Year
... from
Military
Arms ...**

EVEN SOONER: In 18 months to 2 years after the end of the war, rather than in three to four years as originally stated (in the following estimate) by RCA, television service may cover 46 per cent of the potential video market—reaching about 50 million consumers—as a result of television license applications now actually on file, which increased from seven to 63 in the past eleven months.

IN announcing the formation of the IRKO Television Corporation for the purpose of offering program-building services to the telecasting industry, the parent organization also issued a city-by-city forecast of television growth

covering the three immediate post-war years. The statistics used are based on a survey made by the RCA-Victor Division, Radio Corporation of America.

Many dealers have been mentally

tooling-up to handle any and all kinds of television business, and here is as good an estimate of how sales may go as any we have seen. At any rate, it is an intelligent "guess," based on the best currently available information as to where and when broadcasting stations may be progressively set up. The survey assumes that "all important radio manufacturers will start making television receivers as soon as they can."

The dealers' shelves will certainly not be bare of television merchandise in areas that before long—conservatively estimated at five years from now at the outside—will include 60 per cent of the electrified homes in this country, in 157 cities of 50,000 or more population.

Which Comes First?

There has long been discussion among those studying television as to which could come first, transmitting stations or receiving sets. Will a consumer buy a set when there are so few stations and but a limited number of programs? Will an advertiser buy

tions over a 50-mile radius.

Television service in Philadelphia covers a 50-mile radius and reaches 1,200 sets viewed by 6,000 persons. Service in Schenectady covers a 30-mile radius and reaches 450 sets viewed by 1,800 persons. In Chicago service covering a 30-mile radius reaches 300 sets viewed by 1,200 persons; while service in Los Angeles reaches 250 sets viewed by 1,000 persons in a 50-mile radius. In addition there is a station in Cincinnati, not yet on the air but ready to operate, which will cover a 30-mile radius.

But there are a lot of people in these cities, a lot of electrified homes and almost 30 per cent of the country's buying power. The total population within the radius reached by all of the television broadcasting stations in the six cities mentioned above—the "television population"—comes to 27,225,000, with about 7,788,000 electrified homes. So, the study concludes, there is a potential market right now for nearly 8 million sets. But dealers will have to wait until after the war be-

Television Year-by-Year

The "right away" market for which radio dealers will largely be the sources of supply for television receiving sets will grow about as follows, from the post war commercial start to coverage of 22 major cities mentioned above:

	No. of Sets*
Period I (based on present television station coverage)	7,410,922
Period II (additional television coverage 1 year post war)	9,066,219
Period III (additional television coverage 2 years post war)	10,720,959
Period IV (additional television coverage 3 years post war)	13,120,512
Additional television coverage 5 years post war, total	17,400,000

*The totals are cumulative

The total market that may await dealers in these nine cities one year after the war will therefore be for approximately 9,593,000 television receivers.

Period III—2 Years Post War

This period will see Hartford, Baltimore, Milwaukee, Minneapolis and Boston adding a total of 7,565,000 "television population," with 2,047,000 electrified homes and around 8 per cent of the nation's buying power. By then, the grand total potential market for receivers will have grown to 11,640,000—representing over 45 per cent of the buying power.

Period IV—3 Years Post War

By then, the cities of Springfield, Mass., Providence, Pittsburgh, Cleveland, St. Louis, Buffalo, Rochester and the Kansas Cities will have been added to the roster of television broadcasting areas—a total of 22 cities. By that time, dealers serving those areas will draw their customers for television receivers from a "television population" totalling 52,076,000, in 14,423,000 electrified homes, representing 58 per cent of the nation's buying power.

And finally the report foresees full major city coverage reached in the fifth year following the war. In the 157 cities of 50,000 population and over (mentioned earlier) some 17,400,000 electrified homes, representing over 61 per cent of the nation's buying power and 55 percent of its population, will form the base of the potential market for dealers' sales of television sets. And these city figures, the report points out, do not include many smaller nearby communities which could no doubt be served within a reasonable time.

Photos from General Electric



... to civilian arms?

television time when there are so few sets? The old question of the hen or the egg.

But an answer is at hand, now. The six cities in which transmitters are already installed can today provide the needed program service for an enormous slice of the country's population. These cities and the market they represent are considered in the survey as

Period I—Now

There is television broadcasting right now in New York City, seven days a week. Some 5,000 sets viewed by 40,000 persons are receiving these broadcasts sent out by three different sta-

fore they can begin to cash in on this enormous, waiting market.

Period II—1 Year Post War

The above total can be merged with the estimated number of customers that will be added during what the forecast identifies as the second period. The three additional cities which will have television stations as soon after the war as equipment can be made available are known to be: Washington, D. C., Detroit and San Francisco. The "television population" of these cities comes to 6,246,000, with some 1,805,000 electrified homes, representing 8 per cent of the country's buying power.

DISCussion

Records and Record Makers by L.C.S.

Robots avoid Glenn Miller and band . . . in London, this captain in the Army Air Forces moved from a billet which was later destroyed by one of the sneak bombs. **Tommy Dorsey** is proteging handsome blonde bandleader **Dean Hudson** . . . for a screen test. **Jackie Gleason**, hit comedy star of "Follow the Girls," is co-grooming with **Perry Como** for "Como and Gleason, Songs and Patter" . . . a new air and pix show. **Ton-sils** out, **Vaughn Monroe** is in again . . . **Paramounting** in September. **BBC** airs **Glenn Miller's** Army Air Forces band . . . from England . . . six times weekly . . . Englishmen like **Glenn's** samples of real American small band jive in between broadcasts . . . featuring pianist **Mel Powell** and drummer **Ray McKinley**. After recording some new tunes . . . **Dinah Shore** will leave for Pacific shores to do some trooping for the troops. **Gene Krupa** heads his own band . . . and records are broken at the Strand . . . maybe its the string section trimming up the usual instrumentation.

Our master de drumming le wash-board . . . **Spike Jones**, entertains troops in Europe . . . musicians, cowbells, washboards and all . . . still hopes to "phhht" Spikishly in "Der Fuehrer's Face" which is also a number he disced up for Victor. **Phil Moore** composed "Shoo Shoo Baby," and others . . . bored playing gin rummy with **Bud Abbott** and **Lou Costello** . . . en-train from Hollywood to Manhattan . . . **Lou** and **Phil** passed the time writing a new ditty, "Don't Take It North, Put It In

The South" . . . sounds a little vague. The four dress-shop owning, **Bluebirding King Sisters** (**Alyce, Louise, Donna** and **Yvonne**) became quins . . . when **Jerry Lester** joined in while they were airing in Hollywood. Add new discers . . . **Zinka Milanov**, Metropolitan Opera star . . . a Yugoslavian dramatic soprano . . . for Victor. **Swing and Sway Orchestra** is **Sammy Kaye**-ing at NY's Hotel Astor. **Hal McIntyre** and band . . . work nights in a Hollywood ballroom . . . make pix by day. **Artie Shaw** starts a 40-piece dansorchestra.

Sammy Kaye's vocalist, **Sally Stuart** was spotted as a "lovely" by model agent **Harry Conover** . . . so **Sally** will **Kaye** on, but will do magazine cover assignments in her spare time. **Lena Horne** and ultra modern pianist **Mel Henke** appear on "Music America Loves Best" air program. **Sammy Kaye** broadcasts a new program over Mutual. **William Kapell** is the 21-year-old pianist who is under contract to **RCA Victor** as a new recording artist.



Rise Stevens

Records to Sell

RCA-Victor:

Perry Como and mixed chorus perform on both sides of disc 20-1592. "Lili Marlene" is a doughboy favorite by now. A sentimental, about the girl left behind as her soldier-lover marches off to fight. A male chorus provides a driving beat which gives the song a march effect. "First Class Private **Mary Brown**" is baritoned romantically

against the lilting rhythm of the chorus. From "About Face," the Army Special Service Revue.

Tony Pastor and his Orchestra (30-0827) in "Dance With a Dolly With a Hole in Her Stocking," which **Tony** vocalizes while the band riffs along. "Don't Blame Me" is a sad ballad arranged by **Shep Field**.

Tommy McClennan, the blues singer with the guitar lends his shouting voice to "I Love My Baby" and "Shake It Up and Go." Both tunes are authentic 12-bar blues with incidental ad lib lyrics.

Dinah Shore with mixed chorus (20-1594) gives us "Together"—a hit song from the pix "Since You Went Away" and "I Learned a Lesson I'll Never Forget," a torchy ballad of the day, with mixed chorus.

Johnny Hodges and Orchestra (30-0817) offer a possible "collector's item" in "Passion Flower" and "Going Out the Back Way." The first is slow and moody, the flip a lighter number—both feature **Johnny** and his sax. The "orchestra" was culled from **Duke Ellington's** crew just for the recording, which makes it a unique platter.

Fats Waller (20-1595) in "Oh! Frenchy" and "It's a Sin to Tell a Lie." In the first, **Fats'** comedy vocal supports his swell pianojazz; the flip is a fox trot, with the small band jamming hot



New disc-artists: **Mel Henke**, piano, will disc solos. **Phil Moore** will go a-la quartet.

behind Fats' piano and vocal.

Marian Anderson (Album M850) in "Great Songs of Faith," by Bach, Handel and Mendelssohn. Album M555, in "Brahms Alto Rhapsody"; and another Brahms number, Album M882, "Two Songs for Alto," with accompaniment. This great negro singer's discs are good "ensemble" sale items.

Columbia:

The Charioteers (36730) put on—and put over—a spiritual styling in "Sylvia" and "This Side of Heaven." A coupling by one of the finest negro pop vocal quartets.

In Set C-100 the dealer will find four couplings, offering an "Operetta Potpourri" by Marek Weber and his Orchestra. Selections from "Gypsy Baron," "Die Fledermanus," "Student Prince," and "Countess Maritza" each on a coupling. Music familiar to everybody.

Beecham-London Philharmonic (Album M548) offer Symphony No. 34 by Mozart. Robert Casadesus (Album X236) plays Piano Sonata in A Major by Franz Schubert.

Nelson Eddy (Album M440) gives out with a bunch of "Patter Songs from Gilbert and Sullivan," which Eddy fans will go for. The Mikado, Yeomen of the Guard, Iolanthe, Sorcerer, H. M. S. Pinafore and Pirates of Penzance are represented.

Decca:

"A Connecticut Yankee," (Album A367) gives melody highlights from



Dennis Day

the show, with Vivienne Segal, Dick Foran, Julie Warren and others, with orchestra and chorus under George Hirst.

Dick Ellington in "Ellingtonia" (Brunswick Album B1011) Vol. 2, gives us "Creole Rhapsody," "Tiger Rag." Two fine blues, "Tishomingo" and "Yellow Dog." And finally, "Jazz Convulsions" and "Awful Sad." All eight show the Duke and his orchestra at their very best.

Jimmy Dorsey and his Orchestra (18616) bring two new ones to record



Rosemary La Planche in RKO Radio's "None But the Lonely Heart"—name song recorded by popular discers.

fans. "An Hour Never Passes" with vocal. "Two Again" is a fox-trot melody written by Jimmy, sung by Paul Carley.

Evelyn Knight, (Black Label 18614), in a number she made popular at the Blue Angel nightery—"Dance With a Dolly." The background is solidly rhythmical and innovations catch the ear. "Without a Sweetheart," is the backing, composed by Henry Nemo. Orchestra is by Camarata.

Jerry Wald and his Orchestra, (Blue Label 4446). Jerry top-ranks as a clairinetist, and gives a smooth fox-trot in "Two Heavens," assisted by vocalist



Paul Weston

Dick Merrick. "Since You Went Away" is the flipover, inspired by the current United Artists' movie pix. Vocal by Ginny Powell.

Capitol:

Johnny Mercer (164) sings his own composition in "Duration Blues." The flip is a novelty song, "Sam's Got Him." Johnny is featured on NBC's "Chesterfield Music Shop" spot.

Ella Mae Morse (163) gives two numbers over her "heated pipes"—The Patty Cake Man" and "Invitation to the

Blues." Both are orchestra accompanied.

Classic:

Louis Prima and his Orchestra (7106) in "Angelina" and "Oh Marie," with vocal refrains. Both are for the younger set which makes them a juke special with a "gangy" appeal. In 7107, Prima offers "Beloved" and "Dance With a Dolly." The first is a ballad from Dorothy Lamour's Paramount pix "Rainbow Island," the coupling is a novelty. Both with vocal refrains.

Xmas Disc Merchandising

Advance news from the manufacturers who have been doing their bit to help keep many a radio service and appliance dealer solvent these days with lines of records and record albums, indicates that dealers will get a better merchandising break for this Christmas. Displays will be "different" this year. The merchandising ballyhoo which manufacturers will send out (by November, as usual) will give dealers a chance to do a multiple job of display—alternating the same elements from show window to store interior. This will be a sort of "follow-up" and "follow-through" point-of-sale program to build for larger unit sales per customer. And the customer is very well-heeled this year in the way of ready, heavy cash.

Gift certificates will make their appearance as before, and some of them may be "earmarked" for different members of the family, with suitable recordings recommended for each. Children's records will get a big play this year, with attractively designed albums holding favorite selections from the classics to the pops. Important re-releases of famous Christmas music recorded by popular artists will also be included in the overall "package" dealers will be helped to sell during the coming Christmas season.

More detailed information will be published in the November issue of Radio Service Dealer.



Ginny Powell

GI-JOE LOOKS AHEAD

by JEFFREY BROOKS

I left my business to my father and joined the service almost two years ago.

I have dreamed constantly since my first night in camp of the day I'd return to my work bench and test rack. I have long anticipated since I went away, the thrill of once again putting the key into the door and opening the shop for the day's business.

I have dreamed since I went away of a great volume of business—new sets to sell; old sets to repair and adapt so they can receive the newer types of broadcasting. There will be newer methods—technically, that is, for I see what the future holds in the newly developed equipment I am today repairing and maintaining for the Services.

Since I have been away I have been writing regularly to my father (who runs my shop today) to work more closely with my accountant in gauging prices for repair work—labor and parts. And I have written to my accountant asking him to compose a letter to be mailed to all my customers and prospects in the neighborhood I serve. I want them to keep remembering my shop, the services I have rendered; and to continue to support it all during this period of my stay in the Army. I want them to keep my shop alive until the day I return.

I have asked my printer—he used to sell me blotters with the radio log, designed my letterhead, and occasionally composed a hand bill which I stuffed into letter-boxes—I asked him to put together a brochure telling my customers and prospects about the new and improved radios that are coming out of the welter of battle. The manufacturer's national advertising and dealer bulletins are good source material. I want this folder to be illustrated as completely as possible, so that by word and picture, all who read it will understand

Future of service dealer operation foretold in devices employed by armed services.

"I mean to do my missionary selling now, get that much of a jump on my competitor, so that my plans for larger volume business will become real on my return tomorrow"

what my shop will offer in just a few years. I plan to handle a complete line of radios and electronic devices.

I have been writing to my father outlining with word and crude pictures, ideas for merchandising the products I plan to sell after the war. These merchandising ideas, I feel, should be executed by a smart window-dresser to be really effective—to really sell!

Radio Repair Shop windows are mostly meaningless today with their spotting of a tube, or a speaker, or even a table model radio. These components mean nothing to the average radio listener. I have in mind for my series of dramatized windows, a tableau presentation of how and where radios and "electronics" can be utilized in the home. I want the window dresser to picture a living room in all its charm and color, then highlight with striking color the radio-phonograph instrument in that room. And perhaps additional speakers spotted throughout the room making for complete coverage and accurate acoustical reproduction. I want the colors in this large placard backdrop to be striking enough to arrest the attention of the fastest passers-by. It would not be a bad idea to consult an interior decorator for furniture, motif, cabinet design, woodwork and finish.

Each month the presentation should show another room, and another piece of radio or electronic equipment at work for convenience and pleasure. I have thought of several placards for backgrounds showing:

1. Remote speaker systems with volume controls and shut-offs at the remote sta-

tions, in the master bedroom, the nursery, the living room and the kitchen. I want to stress how this remote speaker system can be converted into an inter-communicating system for the home, or a silent nurse for the baby.

2. Electronic devices in the cellar regulating the flow of oil or coal to the furnace; regulating the temperature in the house; electronic and photo-electric cell devices that operate the garage doors, act as burglar alarms and do a hundred and one other jobs.
3. Industrial applications of electronic devices.

I firmly believe that every local radio repair shop will some day be called upon to sell and service every electrical, electronic and radio device in use in the home. My beliefs are based upon the reports to agents and distributors, and the advertising to the general consuming public, done by the large radio manufacturing companies. They have innumerable plans for producing all types of equipment which use electronic tubes.

I see a great future for the wholesale distributor of electronic products who will cater to the industrial needs for electronic equipment. Many factories in all neighborhoods will be using some kind of electronic device to increase production, and at the same time cut production costs. Every doctor's office in town will one day have some kind of electronic instrument for therapeutic treating of ailments. And every hospital and clinic will have in use electron microscopes and X-ray instruments.

I believe that wholesale distributors of these electronic devices will have a need for regional repairmen who can install, maintain and repair their equipment. It will be cheaper for the large wholesale distributors to have a number of radio repair shops under contract to them for the handling of maintenance calls rather than be burdened with a large travelling repair staff. And I want these distributors to come to know of my shop as being run by a wide-awake, progressive and expert radio-electronic engineer.

Although I am in service, my store is very much alive with attention-getting sales letters and good merchandising displays. Yes, I am also desirous of landing one of those regional maintenance engineering contracts with the distributors of industrial electronic instruments. I want all the business I can handle.

As I see it, the radio and electronic industry is the big thing when the war is over . . . it is the billion dollar post-war industry!

In Trade

(from page 12)

Stromberg-Carlson

Clifford J. Hunt, manager of the radio division, announces the appointment of Radio Distributing Co. of Detroit, Grand Rapids, Mich., as distributor of Stromberg-Carlson's postwar radio line in forty-nine counties of western Michigan. The organization also handles Norge, Cory and Proctor appliances.

Insuline Gets "E"

For outstanding achievement in production of radio-electronic products, the Insuline Corporation of America, Long Island City, N. Y., was awarded the Army-Navy "E" pennant. Samuel Spector, president of the company, received the award from Col. Kenneth B. Johnson, Signal Corps, Washington, D. C.

Bendix Home Radio Active

William P. Hilliard, general manager, Radio Division of Bendix Aviation Corp., Baltimore, announces appointment of H. L. Baumgardner as district manager for the central Chicago metropolitan district. Mr. Baumgardner was formerly vice-president of the George W. Borg Corp., Chicago. Also, appointment of Jack C. Wilson as Pacific district manager, with headquarters in San Francisco. Mr. Wilson was formerly senior administrative officer of the U. S. Army Signal Corps production field office. Selection of distributors in the above areas is underway.

Clarostat Jobbers Sales

Appointment of Leon L. Adelman as advisory sales manager is announced by Clarostat Mfg. Co., Inc., Brooklyn, N. Y. In addition, Adelman will handle jobber sales in the New York metropolitan area. The appointee has been identified with sale of radio and electronic components through legitimate distributors for over twenty years. In his advisory capacity Mr. Adelman will work closely with Clarostat distributors throughout the country.

Zenith Auto Radios

J. J. Nance, vice president and director of sales, announces another move in Zenith Radio Corporation's program of aggressive post-war expansion in the appointment of Walter H. Dyer as manager of the auto radio division. Dyer left a similar position with RCA. Sales will be direct to auto manufacturers.

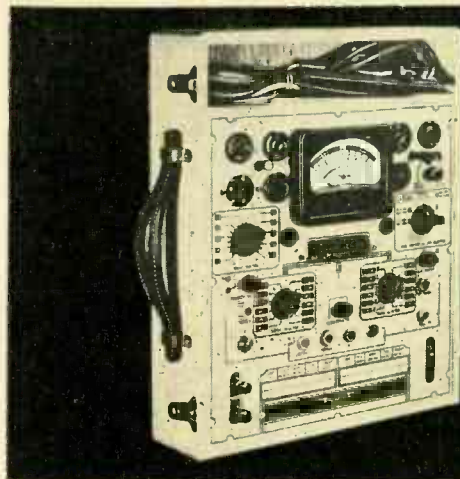
Admiral Adds Distributors

Ross D. Siragusa, president of Admiral Corporation, Chicago, announces a number of new distributorships throughout the country: Appliance Merchandisers Company, Peoria, Ill., for central Illinois; The Bimel Company, Cincinnati, O.; Griffith Distributing Corporation in Indianapolis, Ind., territory; Peaslee-Gaulbert Corp., in Atlanta, Ga., and Jacksonville, Fla.; Monroe Hardware Co., in Monroe, La.; Kaemper-Barrett, San Francisco and Oakland, Cal.

(Continued on page 36)

CHECK THE PROFITS

in these
top-notch
testers . . .



RCP PORTABLE DUALTESTER

MODEL 804

\$84.50



ULTRA-SENSITIVE MULTITESTER

MODEL 488

\$59.50

RCP QUALITY • ADVANCED ENGINEERING & DESIGN

MODEL 804 is a complete Tube, Battery and Set Tester for direct testing of all old and new type acorn tubes. Provides complete leakage test under rated voltages for electrolytic condensers, regular resistance test for electrostatic condensers at high voltage, also complete battery tests for all popular sizes and types. Low-range ohmmeter is back-up low-drain type. Medium-range ohmmeter is powered by plug-in line supply. High-range ohmmeter operates on self-contained batteries. Other features include famous Dynoptimum test circuit; plate voltages and plate loads as specified by R. M. A.; double line fuses; tests separate sections of multi-purpose tubes; hot interelement short and leak tests between individual elements; separate tests for noise, hum and intermittents. Supplied with high voltage test leads. 135 volts, 50-60 cycles.

MODEL 488 Ultra-sensitive Multitester has Dual D. C. Sensitivity 20,000 and 1,000 ohms per volt . . . with measurements for A. C. Amperes. Built to meet Signal Corps Standards, it is an ideal instrument for field and shop testing. Wide-scale 4 1/2" meter with movement of 50 microamperes. Readings as low as 1 microampere. All multipliers matched and 1% accurate. Exceptionally fine ohmmeter scale spread 75 to 1 ratio from center to full scale, readings as low as 0.25 ohms. Heavy duty high voltage test leads included. Quick change plug-in type meter rectifier—no soldering required. Batteries easily replaced by releasing spring clamp. Model 488, complete with self-contained battery, test probes and carrying case.

These are only two out of the complete "quality and value" RCP line. Today—packed with even greater technical advancements, better engineering, superior design. Get the facts—write today for Catalog No. 128.

RADIO CITY PRODUCTS COMPANY, INC.

127 WEST 26th STREET



NEW YORK 1, N. Y.

MANUFACTURERS OF PRECISION ELECTRONIC LIMIT BRIDGES — VACUUM TUBE VOLTMETERS
VOLT-OHM-MILLIAMMETERS — SIGNAL GENERATORS — ANALYZER UNITS — TUBE TESTERS
MULTI-TESTERS — OSCILLOSCOPES — AND SPECIAL INSTRUMENTS BUILT TO SPECIFICATIONS

SELECTED APPLIANCE PRODUCTION

A reserve of 100,000 tons of carbon steel, 25,000 tons of alloy steel, 15,000,000 pounds of copper and adequate amounts of aluminum has been set aside for the fourth quarter of this year to cover a number of contingent, non-military production programs set up by the Office of Civilian Requirements with the consent of WPB.

Most of the programs are still in the paper stage, and even if carried out in full, would not mean that the products would be available on a wide enough

scale to satisfy even the essential civilian demand. Work on them will depend entirely upon the availability of facilities, manpower and components. While most manufacturers in the permitted lines of commodities are solely occupied with war contracts, the materials listed above will be available to those manufacturers whose plants are already open for civilian production and who can satisfy manpower requirements.

Dealers will be interested in the fact that among the programmed items are

domestic mechanical refrigerators, washing machines, vacuum cleaners, miniature incandescent lamps, electric ranges, batteries for farm radios, electric fans for industrial and commercial use, domestic electric water heaters, electric and spring-wound alarm clocks.

Reasons given for selecting these items for the "permitted" civilian production list are as follows:

Radio Batteries: The program is calculated to provide cells for only a minimum amount of essential tuning-in. Batteries are essential to farmers without a central electrical service.

Domestic Washing Machines: Shortage of commercial laundry facilities, increase in birth rate, and the larger number of women who are now working make this need especially urgent.

Alarm Clocks: The program would meet only most urgent needs in this "hardship shortage" item.

Electric Water Heaters: For replacement.

Electric Ranges: Required for essential replacements and to provide for new installations where use of no other type of cooking stove is feasible because gas is not available or a chimney is lacking.

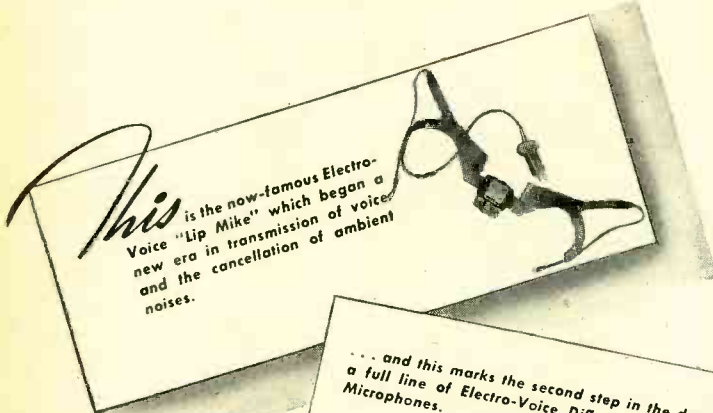
Fans: Electric fans needed for use in factories and commercial establishments.

Small Electric Lamp Bulbs: Needed for replacement purposes in railroad lanterns, flashlights and automobile headlights.

Refrigerators: Production is needed to maintain the stockpile of refrigerators for blood banks, hospitals, storage of biologicals and similar uses and to provide for essential replacements and use where ice is unobtainable.

Will any considerable quantities of the items listed above find their way to the dealers' shelves? This question long in the minds of many service dealers, cannot be answered with any definiteness. Dealers in rural and farm areas will apparently, clear some products to private customers, if as and when available. Especially radio batteries, refrigerators and small electric lamp bulbs. For urban areas, dealers will probably get a chance to clear fans, domestic washing machines, vacuum cleaners and perhaps electric clocks. Production of limited quantities of electric irons is already underway (RADIO SERVICE DEALER, September, 1944).

Service dealers know that most governmental controls on civilian production will be removed with the end of the war in Europe. The above "permissions" to go ahead with production of items for civilian use are merely the beginning dribble—prior to the end of war in Europe—of what promises to become greater and greater in volume as military cutbacks increase with the lessening of demand for materiel. The above items were selected because of the extreme need for them on the home front, and because of the critical common components required, and because the manufacturing problems of some of them must be carefully studied in order that production might be arranged without interference with war needs. Needless to say, of radio production there is as yet no sign—for civilian use. But every radio manufacturer is getting ready to do some "programming" on all "fronts"—production, distribution through wholesale and retail—and that's where you, the radio service dealer, will come in.



This is the now-famous Electro-Voice "Lip Mike" which began a new era in transmission of voices and the cancellation of ambient noises.

... and this marks the second step in the development of a full line of Electro-Voice Differential (noise-cancelling) Microphones.

Electro-Voice
DIFFERENTIAL MICROPHONE
NEW MODEL 205-S
Designed, developed and built by E.V. engineers and technicians

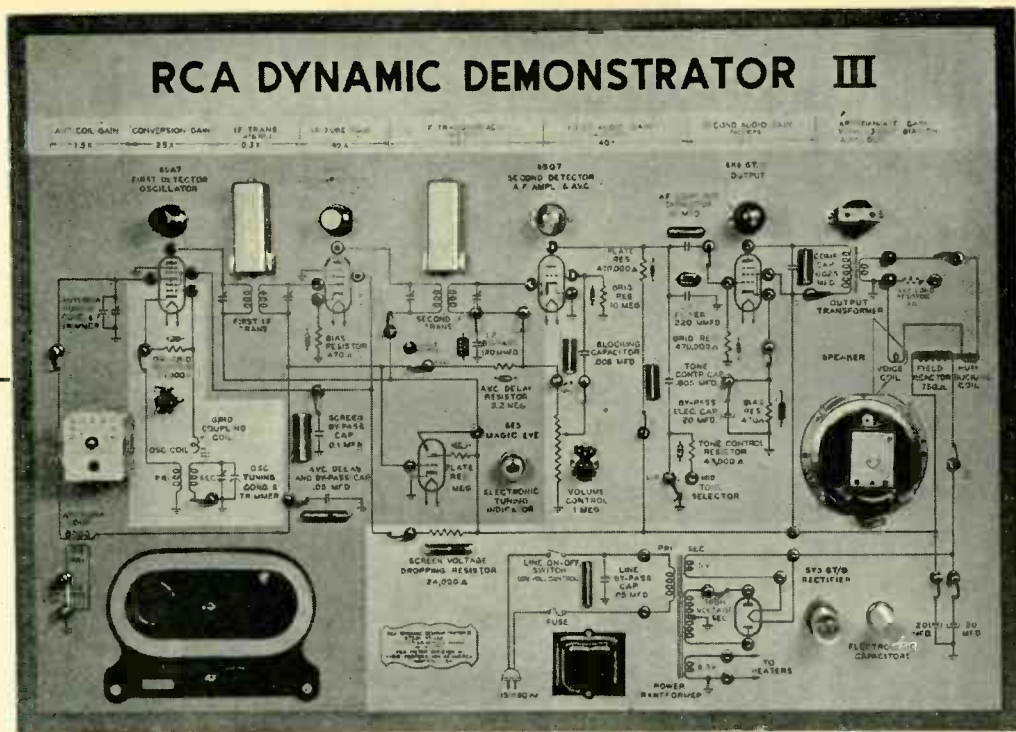
- Provides extremely high intelligibility, even under intense surrounding noises
- A most efficient microphone for aircraft, factories, railroads, police and emergency services
- May be used in all temperatures from -40 to +185 degrees, and is interchangeable with conventional carbon microphones
- Close-talking, blast proof, waterproof and shock-resistant
- Operates satisfactorily in all positions
- Frequency response substantially flat from 100-5000 c.p.s.; high output level: -20 DB (0 DB = 1 volt/dyad/cm²); internal noise level below .001 volt.
- Press-to-talk switch opens microphone and closes relay simultaneously, if desired
- High impact phenolic case, 4" x 2-5/16"; Fiberglas wind noise filter; weighs less than 8 ounces
- Cable length, 5 ft.; panel mounting on the back; available in two models: Model 205-S, and 205-SL with switch lock.

If your present limited quantity needs can be filled by any of our Standard Model Microphones, with or without minor modifications, please contact your nearest Electro-Voice distributor.



Electro-Voice MICROPHONES

ELECTRO-VOICE CORPORATION • 1239 SOUTH BEND AVENUE • SOUTH BEND 24, INDIANA
Export Division: 13 East 40th Street, New York 16, N. Y., U. S. A. Cables: Arlab



The Working Schematic Circuit Diagram that has helped thousands to learn radio principles, circuits, and servicing

The RCA Dynamic Demonstrator is a complete schematic diagram of a modern six-tube superheterodyne radio receiver; all circuits clearly visible; all operating parts mounted in their proper places in the circuits; the correct symbol representing each respective part in plain sight beside that part; and the whole hook-up arranged in perfect working order.

Each Circuit Section in Different Color—Large color-blocks differentiate each circuit section: the power section is blue; audio frequency, green; intermediate frequency, orange; oscillator, yellow; radio frequency, red.

Pin Jacks and Switches—At all important measuring points there are pin jacks for instrument connections, or insertion of jumpers. All types of part or circuit failures can easily be simulated to facilitate effective methods of location and correction. Other types of simulated failure

can be realistically produced by operating switches provided on the back of the Demonstrator.

Typical Applications—A specially prepared RCA Instruction Manual is supplied to help teachers and students use the RCA Dynamic Demonstrator to best advantage. This instruction booklet contains many well-illustrated suggestions for helpful experiments, with adequate explanations of the nature, purpose, and significance of each experiment.

Write for Data—A large number of RCA Dynamic Demonstrators are now being used in schools and colleges and for radio instruction of the armed forces. For complete information regarding this interesting and valuable radio teaching aid, write to Test & Measuring Equipment Section, RADIO CORPORATION OF AMERICA, Camden, New Jersey.

★ BUY MORE WAR BONDS ★

1919-1944 — 25 Years of Progress in Radio and Electronics



RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

RMA Activities

Radio service dealers in many communities will be interested in the promise of new sources of business indicated by the activities of the School Sound Systems Committee, Radio Manufacturers Association, to develop specifications and promote the use of public address equipment in schools and similar institutions. Readers of this magazine who are already installing and servicing p-a systems in their communities will no doubt hear of contemplated school and institutional jobs as they develop, and get their share of the business. Others will no doubt find that the effort to go after this new business will more than repay them for their trouble. In any case, this may well be another "plus"

on the books of radio service dealers for new post-war business.

Capacitor Standards

The need for standardization on fixed capacitors, particularly of the mica, paper and electrolytic types, for post-war service, is being studied by a subcommittee of the Radio Manufacturers Association. Recommendations and standard proposals will be prepared for presentation at a future meeting this fall.

J. I. Cornell of New York is chairman, and the groups are headed by: Electrolytic Capacitors—H. E. Rice, North Adams, Mass.; Paper Capacitors—L. Kahn, New Bedford, Mass.; Mica Capacitors—A. DiGiacomo, Brooklyn.

Bigger Sales

(from page 15)

manufacturers. These families speak one language, want similar goods, have high standards of living, and are not divided by tariff barriers such as are found in Europe.

Nowhere else in the world does there exist such a gigantic market. For radio service dealers—as for other retailers—the truly anxious question is whether the people as a whole will wait to “see how things turn out” before buying. If the whole nation hesitates, a depression with serious unemployment can result.

Retail dealers and all those who sell goods can help overcome this hesitation by well-planned sales and advertising programs, as indicated by local conditions.

It is hard to believe that if war restrictions are relaxed and more goods make their appearance, the people will not spend at least part of their great savings. If they should spend too freely while goods are still scarce, the results would be dangerous, sending prices up and causing inflation. Moderate spending is to be hoped for, rather than a scramble for scarce merchandise.

Sales Depend on Dealers

Without committing themselves completely to an optimistic forecast, retail dealers may well decide to take all the steps necessary for estimating their future volume of business, and for laying out the programs they would need to follow in order to handle that volume when it develops.

The goods that will be made in factories must also be sold. That part is to a great degree the responsibility of retailers. Even “production” goods—steel, machinery, chemicals—in the end produce goods for ultimate consumers, who are the people reached by all retailers, including radio service dealers. All manufacture ends in the retail sale.

Among the owners and employees of small stores are energetic men and women who have begun in a small way but are destined for a greater future. This is true especially in the field of radio and electrical home appliances. In this branch of retailing there's a great future for capable men and women who know how to make people want and own more goods.

The movement of goods into the ownership of the people who use them is handled by retail dealers. The decisions made by dealers now, for themselves, will influence the future welfare of the nation. And the retailer who makes a plan now is doing his best to insure his own future.—L. C. S.

National Radio Institute

Willard Moody, technical consultant announces the National Radio Institute, Washington, D. C., celebrated its 30th anniversary with a luncheon meeting at the local Statler hotel, on October 18.

KEN-RAD

Metal Tubes

SIMPLE
AND ECONOMICAL

RUGGED...
THE BOY WHO
RETURNS WILL
TELL YOU

PREFERRED WITH
AIRBORNE
EQUIPMENT

SELF-SHIELDING
... NO SEPARATE
METAL ENCLOSURES
NECESSARY

COMPACT...
PERMITTING A
FINER RADIO IN A
SMALLER CABINET

PREFERRED
BY A MAJORITY
OF RADIO SET
MANUFACTURERS

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

1934 introduced the first metal receiving tubes
In seven short years prior to Pearl Harbor
over seven and one-half million new radio
receivers were equipped with this finer
Ken-Rad product

KEN-RAD

EXECUTIVE OFFICES

OWENSBORO · KENTUCKY

EXPORTS 15 MOORE STREET NEW YORK

TRANSMITTING TUBES
CATHODE RAY TUBES
SPECIAL PURPOSE TUBES
RECEIVING TUBES
INCANDESCENT LAMPS
FLUORESCENT LAMPS



The United States Navy has awarded the men and women of Hallicrafters a special "Certificate of Achievement" . . . first award of its kind . . . for outstanding service with the radar-radio industries of Chicago in speeding vital war material to the Navy. Added to the four Army-Navy "E" awards, this makes five times Hallicrafters workers have been cited for distinguished service. They promise that this kind of service will be continued until total victory is ours.

★ BUY A WAR BOND TODAY

hallicrafters RADIO



THE HALLICRAFTERS CO., MANUFACTURERS OF RADIO AND ELECTRONIC EQUIPMENT, CHICAGO 16, U. S. A.

In Trade

(from page 31)

Frank to Hallcrafters

Raymond B. Frank, formerly Naval inspector in charge of radio in the Chicago area, joins the advertising department of the Hallcrafters Company, Chicago.

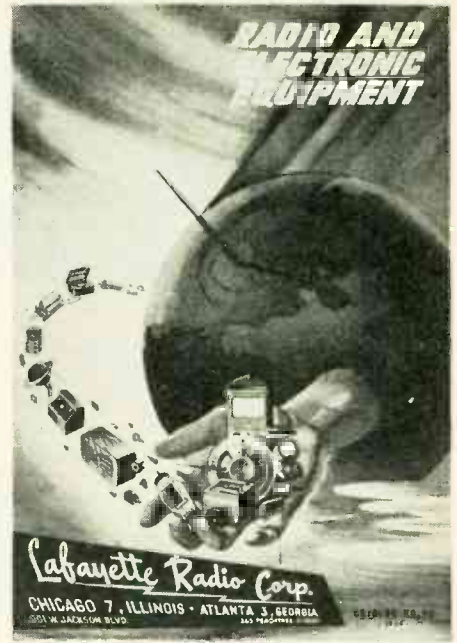
NEDA Blue Book

This booklet will contain the new Constitution and By-Laws and an up-to-date list of members grouped by Chapters. The Blue Book will be distributed to members at the Conference (Oct. 19-21) Chicago, and mailed to those who did not attend.

West Coast Electronics Show

H. L. Hoffman, of Hoffman Radio Corp., and president of the West Coast Electronic Manufacturers' Association, presided at the 1st annual Electronics Industry Show held recently in Los Angeles. Exhibits were also held by the San Francisco and Los Angeles Councils. The industry was represented by set manufacturers, component parts and electronic suppliers. Booth displays ranged from tubes to transmitters.

Lee Howard, Peerless Electric Mfg. Co. of Los Angeles, headed the show assisted by Sol Smith, secretary of the Los Angeles Council and Herb Becker, of Eitel-McCullough, Inc., secretary of the San Francisco Council. Bill Gudie is secretary of the association.



Replacement Items Released

Not everything in radio components and items is unobtainable. Lafayette Radio Corporation has brought out a 4-page folder #96, to inform servicemen of the new and available items.

Many components and equipment have heretofore been scarce, and others have been out altogether. Both these obstacles have been overcome, and the new folder will at once show that the customer need not wait for the duration for some of the items which have just been released by manufacturers.

Send your request for a free copy to the company at 901 West Jackson Bldg., Chicago.

More "B" Batteries

WPB announces that hearing aid batteries will again be authorized on an industry-wide basis. This means that, beginning with the fourth quarter of this year all of the five manufacturers in the industry will make the items, though on a limited basis.

This clears the decks so that dealers who handle these batteries will from now on be able to get their preferred brands from their regular sources of supply. Up to now only two of the manufacturers were allowed to produce hearing aid batteries for non-military use. Radio service dealers who have been taking care of hearing aids report a satisfactory volume of such business, with a good margin of profit.

WPB Change

Hiland G. Batcheller, Operations vice chairman of the WPB, announces L. J. Chatten is the new director of the Radio and Radar Division. Outgoing is Ray Ellis, who went back to General Motors, but will continue with WPB as consultant. Mr. Chatten is stepped up from a 16-month spell as assistant director of the division he now heads.

Heller of Insuline Passes

Alexander G. Heller, died recently after a long illness. He was treasurer and chief engineer of the Insuline Corporation of America, Long Island City, N. Y.

(Continued on page 43)

"THE HELP SITUATION" by J. F. Rider

Agencies Established For Placing Men Trained in Wartime Radio

New York—Oct. 1, 1944: Every month brings the establishment of a more complete machine for the replacement of the millions who will be released from war activities when Victory comes to the Allies. Employees seeking help are advised to communicate with:

1. Any of the eighteen camps established by the Army as separation centers.
2. The local draft board and its re-employment committee man.
3. The local U. S. Employment Service office.
4. The Veterans' Service Center.

There are thousands of men who knew nothing of radio before the war, who during their term of military service or work at war-plants have been thoroughly trained in the theory and practice of electronics.

Currently, 70,000 discharged veterans are re-entering industry every month. With the coming of victory, some 8,000,000 service men and 20,000,000 war workers will seek new employment.

Hundreds of thousands of these people have been trained in radio. Here is your answer to the liquidation of that huge pile of unfinished work in your shop. Contact the various agencies that are trying to find peace-time jobs for these men you need.

But get them started right in your shop. Furnish them with the authoritative and necessary servicing information contained in Rider Manuals; a complete set for each bench.

Make available to them too, the other Rider Books that are full of helpful hints on civilian set maintenance. Do these things: now—today.

PLACE YOUR ORDER TODAY

Thousands of dollars were spent by industry and the Government in training these people. Their knowledge and skill are now available to employers who communicate with the proper Government offices.

HERE'S VALUABLE HELP FOR YOU

RIDER MANUALS (13 VOLUMES)

Volumes XIII to VII.....\$11.00 each volume
 Volumes VI to III..... 8.25 each volume
 Abridged Manuals I to V [1 volume].....\$12.50
 Automatic Record Changers and Recorders 6.00

OTHER RIDER BOOKS YOU NEED

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

JOHN F. RIDER PUBLISHER, INC.

404 Fourth Avenue, New York 16, N. Y.
 Export Division: Rocke-International Electric Corp.
 13 E. 40th Street, New York City Cable: ARLAB

RIDER MANUALS

GIVE YOU THE HELP YOU NEED!

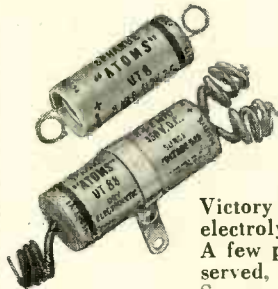


SPRAGUE TRADING POST



A FREE Buy-Exchange-Sell Service for Radio Men

REPLACING WET ELECTROLYTICS WITH DRYS



In many cases—particularly in old sets—you can use Sprague Atoms (midget dries) in available Victory Line types to replace unavailable wet electrolytic capacitors. Atoms stand the gaff! A few precautions should, of course, be observed, and these are described in the Sprague "Victory Line" Catalog C-304. Write for your copy today.

WILL TRADE—G.E. self-charging portable radio for Keuffel & Esser Log-Log Duplex Vector slide rule and \$45. Kishiyama Shig, 3305-A. Newell, Cal.

WANTED—A.C. operated sig. generator—preferably Jackson or Supreme. Jack Taylor, 509 E. Third St., Greenville, O.

FOR SALE—Elliott combination postcard printer and addressor, complete, A-1 shape \$75. Jos H. Lipsky, 1538 S. 50th Ave., Cicero 80, Ill.

WANTED—900-0-900 v. 500 ma. plate trans.; 400-0-400 (450) v. 300 ma. plate trans.; 5-20 hy. 500 ma. smoothing choke; 10 or 15 hy. 500 ma. smoothing choke; 5-20 hy. 300 ma. smoothing choke; 10 or 15 hy. 300 ma. smoothing choke; also one or two each of the following tubes; 117Z6, 6V6, 6F8, 6L6, 6N7, 6Z4, 1A7, 6N6, F. W. Jones, Gabbs, Nevada.

FOR SALE—Superior #1250 multimeter, little used, \$15; Weston #301 100 milliammeter bakelite case, \$8.50; Jewell 3 range DC V-M 7.5, 30, 150, bakelite case, 2 1/2" diam. \$7.50. H. O. Moraw, 824 Marvin Pkwy., Park Ridge, Ill.

WANTED—By serviceman, midget or small short wave AC-DC radio. Home made or commercial set, 10 to 100 meter. What have you? Corp. Paul A. Leeb, Marine Detachment, Naval Air Station, Lake City, Fla.

WILL TRADE—Hallcrafters Super Defiant or SX25 with speaker, in A-1 condition, for Rider manuals of equal value. Also want good condenser tester. Earl R. Fry, 1311 E. 11th St., Winfield, Kansas.

WANTED—All-wave sig. generator; also condenser bridge, Solar model Q.C.A. or Exameter, Edwin Koenig, Swanville, Minn.

FOR SALE OR TRADE—Six pieces radio test equipment, \$200; 135 new tubes (mixed numbers) also new parts and manuals, \$250. No split-up. Cash or what have you? W. S. Crooks, Box 94, Kent, Ohio.

WANTED—Communications receivers, test equipment, chanalyst, record players, tubes, etc. City Radio Service, 507 State St., Madison, Wis.

FOR SALE—El. time switch clock, on-

off current, \$8; Motorola vib. pack 6v. to 250 v. DC, \$3; I.C.A. broadcast band coils, 4 for \$3; 5 table cabinets, \$1.50 to \$2.50; auto steel cabinets, 25c. W. F. Onder, Rt. 1, Box 389, Kimmiswaf, Mo.

WANTED—Superior sig. generator #1230; Superior tube tester #1240; also channel analyzer, H. G. Radcliffe, 1013 High St., Petersburg, Va.

WANTED—All-wave AC sig. generator, preferably Jackson or Triplett; also HY75-955-9002 (2), Cash or swap. Cpl. J. Franklin Kirk, P.O. Box 221, Avon Park, Fla.

WILL TRADE—Complete N.R.I. code course, in A-1 condition, including code machine with practice tapes, oscillator and key, with speaker. Want 12SA7, 12SK7, 12SK7, 50L6, 35L6, IN5, IH5, 1A5, 1A7, 1T5 tubes, or what have you? Ellison Radio Service, Centertown, Ky.

WANTED—V-O-M, tube checker, multimeter, and sig. generator. John Witkoski, Box 8, 338 Taves Ave., McDonald, Ohio.

FOR SALE—Tested used tubes: 15-6FGG; 10-6F6, 15-42, 15-80, 50c ea. Also 1 ea. of many other types. Augusta Electric Shop, Augusta, Ky.

WANTED—Sky Buddy, Echophone EC-1, in any condition, R. E. Haworth, APT 1/C, A&R Dept., N.A.S., Pensacola, Fla.

WANTED—Abbott TR4, with or without tubes, but must be perfect. Pvt. Russell Amello Co. G. 800 Sig. Tng. Bex., Camp Crowder, Mo.

WILL TRADE—Oliver typewriter #9, for radio test equipment, McDowell Radio Service, Box 23, Bollivar, Pa.

FOR SALE—Philco all-purpose set tester, combination test oscillator and multimeter, \$50; Rider manuals 1,2,3,4, \$20; RCA manuals 1923 to 1937, \$15; RCA battery operated test oscillator, with batteries, \$20; adapters to replace almost any tube, 75c ea. Domestic Appliance Service, Montauk Highway, Bridgehampton, N. Y.

WANTED—RCA Jr. voltohmmyst #165A, and other test equipment. What have you? Arnold K. Paul, 1 Eastship Road, Dundalk, Baltimore 22, Md.

FOR SALE—Readrite Ranger #540 all-wave sig. generator, and Hickok emission type tube tester, D'Amont Point, Jr. Good working condition, Lester T. Grove, 400 White Horse Pike, RD 1, Egg Harbor, N. J.

WANTED FOR CASH—EC-1 or similar comm. receiver, with or without tubes. Malcolm Mercartney, 704 Bruce Ave., Clearwater, Fla.

WANTED—Ohmmeter (Triplett preferred); diagram for Emerson Mickey Mouse; also two each: 12SA7, 12SQ7, 12SK7, 6U7, 35Z5, 50L6, and 6X5. L. M. Kilgore Radio Service, Rd. #1, New Kensington, Pa.

FOR SALE—Webster deluxe record changer (changes 16 records, 10" and 12" mixed), late model like new \$95; Meissner 8 tube F.M. tuner, little used, \$48; brand new Astatic #30Y mike, 25' cable adjustable stand, \$25; 2 pr. brand new Klein 6" comb. longnose pliers, \$2.50 ea. f.o.b. M. A. Porter, 1713 Larabee St., Chicago 14, Ill.

FOR SALE OR TRADE—Slightly used, Stancor 100 watt phone and CW transmitter, with set of coil and crystals, tubes, and meters. Modulator section can be used as 14 watt P.A. unit. \$95. Woosley Radio Service, Carlisle, Ark.

FOR SALE OR TRADE—SX-28 Hallcrafters receiver with speaker, in A-1 condition. Want chanalyst and 912P Precision tube tester. Williams Radio Service, 29 North Main St., Webster, Mass.

WANTED—Used radio course. Describe fully. John Hradil, RD #1, Monaca, Pa.

URGENTLY NEEDED—Multimeter and sig. generator in A-1 condition. Stewart W. Geholt, 569 Douglas St., Reading, Pa.

FOR SALE—Readrite sig. generator, #557, battery operated. Want wireless record player, also 50L6, 35L6, and 12SA7 tubes. A. V. Larson, 822 Fourth St., Madison, Minn.

FOR SALE—Clough-Brengle 82 test oscillator. Brush crystal speaker, odd meter. \$35; new F. M. radio-phonograph, \$250; F.M. table radio (used) \$85; Lorraine auto spot-light, \$8. I. Larson, 14 East 30th St., New York 16, N. Y.

FOR SALE—2-7A5, 2-7B6, 2-7E6, 2-7F7, 4-7Q7, 1-3S4, 1-3Q4, 2-1T4, 1-1S5, 4-6AD7, 15-6SK7GT, and many other tubes. Will sell whole lot only, at 20% off list. Also 9 tube Silverstone amplifier, 2-12" P.M. speakers, outside baffles, microphone, built-in turntable; 20 pre-war Delco vibrators; 1 Hickok #123 test speaker. Charles Hurley, Alamo Radio Service, 8208 Humble road, Houston, Texas.

FOR SALE—Supreme #61 all-wave sig. generator, excellent condition. Want

11SV A-C amp, modulated sig. generator in good shape, McFerrin's Electric Shop, Pleasant Hill, La.

WANTED—Rider chanalyst; also complete set Rider manuals—or set from #6 up. Radio Specialist, 834 South Myrtle Ave., Monrovia, Calif.

URGENTLY NEEDED—Two mike-to-grid transformers, 3000 to 5000 ohms, secondary. Gerald Frieders, 323 Benton St., Aurora, Ill.

WANTED—Sky Buddy or similar comm. receiver, CWO - A. E. Williams, Officers' Club, Sec. H., Boca Raton Field, Fla.

FOR SALE—4-68J7GT, 12-68K7GT, 1-64G6, 2-7A4, 2-7A5, 2-7A6, 1-7B5, 3-7E6, 1-7E7, 4-7Q7, 3-35Z5, and many other new tubes in sealed cartons. O.P.A. list prices—no order less than 10 tubes. H. Mason, 61 West Sidney Ave., Mt. Vernon, N. Y.

FOR SALE—Many hard-to-get radio items—what do you need? G. Samkowsky, 527 Bedford Ave., Brooklyn, N. Y.

WANTED—Volt ohmmeter and transmitter, preferably 100 w. CW and phone bands, with all tubes and coils. Jerro Murchison, Eden, Texas.

WANTED—Meters and test equipment—or what have you? George H. Welch, 1323 Bunsen Way, Baltimore 24, Md.

FOR SALE OR TRADE—Hallcrafters' Skybuddy, Stancor 25-B transmitter. Want Hallcrafters' SX-25, Donald A. Kadish, U.S.M.S., 9 Peters St., Cambridge 39, Mass.

WILL TRADE—Mallory battery booster #3C, crystal pickup, Philton battery radio (chassis), 2-12SQ7GT's, 1-12SK-7GT, 1-32L7GT, 1-12RBGT. Want AC sig. generator. George H. Hague, 6 Carver St., Fall River, Mass.

FOR SALE—Hallcrafters S-19-R, in A-1 condition. Charles E. Reed, 106 Sweet Street, Cocoa, Fla.

WANTED—Good tube tester, sig. generator, and channel analyzer or scope. James B. Judy, Jr., Monterey, Ky.

FOR SALE—AC-DC radio (no tubes), amplifier and new and used tubes. Royce Saxton's Radio Shop, Route 1, Pontiac, Ill.

URGENTLY NEEDED—2-117L7's, 2-25-25CT's, 1-6F6, 1-5Z4, 1-6SJ7, 1-25A6, 1-6BF5, and 2-25L6 tubes, in original cartons; also photo motor, turntable, and crystal pickup. Paul Eranosky, 184 Zerby Ave., Edwardsville, Pa.

FOR SALE—Tubes, parts, P.A. equipment and all size tubular by-pass and filter condensers. Write for list. Grey's Radio & Sound Systems, Inc., Bridge-water, Conn.

YOUR OWN AD RUN FREE!

This is Sprague's special wartime advertising service to help radio men get needed parts and equipment, or dispose of radio materials they do not need. Send your ad today. Write PLAINLY—hold it to 40 words or less. Due to the large number received, ads may be delayed a month or two, but will be published as rapidly as possible.

Sprague reserves the right to reject ads which do not fit in with the spirit of this service.

HARRY KALKER, Sales Manager.

SPRAGUE PRODUCTS CO., DEPT. RSD-104, North Adams, Mass.
(Jobbing distributing organization of products manufactured by SPRAGUE ELECTRIC COMPANY)

SPRAGUE CONDENSERS * KOOLOHM RESISTORS

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

*TRADEMARK REG. U. S. PAT. OFFICE

HATRY & YOUNG

CONNECTICUT

PEACE ALERT

Your meter needs, 50 microamperes to lots of amperes, we can fill. These needs are coming to every electronics expert. **Repair, maintenance or test will call for meters as never before.**

HATRY and YOUNG, aware of this trend, alerted early for war, are alerted equally early for peace and your postwar needs. **We have the meters and can take care of you.**

Your jobber must be alert not only to your condenser, resistor, transformer, speaker and tube needs. He must be ready for all your needs. **Count on H & Y.** We are ready.

Test equipment on hand. Good stocks of all kinds of things to keep you profitably in action.

Electronics Specialists



Consultants • Expeditors

EXHIBITORS

Electronic Parts & Equipment Industry Conference, Chicago, Oct. 19 to 21.

Booth No.

1. Trimm, Inc.
2. General Transformer Corporation
3. Presto Recording Corporation
4. Allen B. DuMont Laboratories
5. Specialties Manufacturing Company
6. Continental Electric Company
7. Industrial Condenser Corporation
8. Electronic Laboratories, Inc.
9. Manufacturers Screw Products
10. DeJur Amsco Corporation
11. Peerless Electrical Products Co.
12. Radio Electronic Parts Jobber*
13. Hugh H. Eby, Inc.
14. Doolittle Radio, Inc.
15. Cornish Wire Company, Inc.
16. Par-Metal Products Corporation
17. Wm. J. Murdock Company
18. The Representatives
19. S-W Inductor Company
20. Kato Engineering Company
21. Radio Service Dealer*
Cowan Publishing Corp.
22. Stromberg-Carlson Company
23. Stanwyck Winding Company
24. Fonda Corporation
25. Jefferson Travis Radio
26. New York Transformer Company
27. Jackson Electrical Instrument Co.
28. Electronic Engineering Co.
29. Noma Electric Company
30. Walter L. Schott Company
31. The Recordisc Corporation
32. Price Brothers Company
33. Airadio, Inc.
34. Ken Rad Tube & Lamp Corp.
35. Garrard Sales Corp.
36. Vasco Products Co.
37. Gothard Manufacturing Company
38. Simpson Electric Company
39. Duotone Company
40. Operadio Manufacturing Co.
41. Tung-Sol Lamp Works
42. The Astatic Corporation
43. Drake Electric Works, Inc.
44. Webster Products
45. Radio & Television Retailing*
46. National Company, Inc.
47. Radio City Products Co., Inc.
48. The Rauland Corporation
49. Merit Coil & Transformer Corp.
50. The Grenby Manufacturing Company
51. John Meck Industries
52. Rek-O-Kut Company
53. Amperex Electronic Corporation
54. Eicor, Inc.
55. Supreme Instruments Corporation

* Publishers



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Centralab

ERL

VOLUME CONTROLS



Centralab

ERL

Division of GLOBE-UNION INC., Milwaukee

(Continued on page 42)



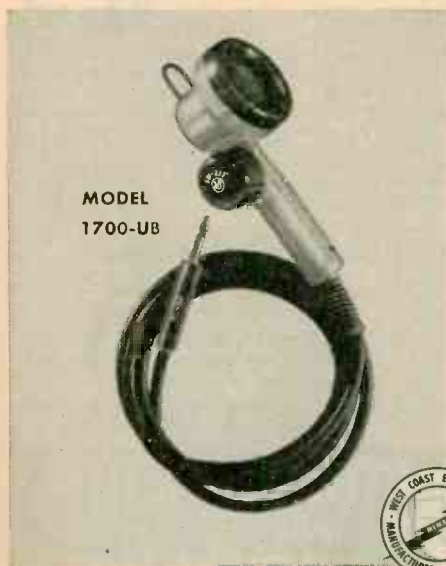
History of Communications Number Seven of a Series

EARLY COMMUNICATIONS BY AIR

While electronics use the ether and other media, one of the most speedy methods of communications in the early days was through the air by carrier pigeon. With a finely printed note fastened to the leg, these birds faithfully reached home to bring in the latest news events and stock market reports.

Today news commentary reaches into your homes in a flash of a second via electronic voice communications making use of the various types of Universal broadcast microphones. This being a modern age, the battle front is brought into the homes of the informed peoples of the democracies via military microphones such as those now being manufactured by Universal for the Allied Armed Forces.

< Model 1700-UB, illustrated at left, is but one of several military type microphones now available to priority users through local radio jobber



MODEL
1700-UB



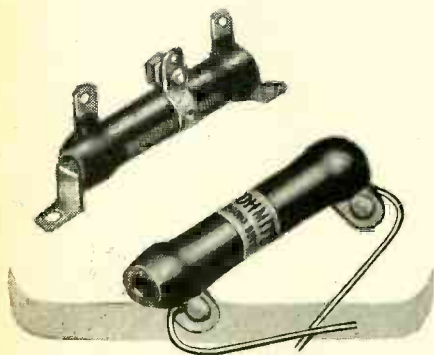
UNIVERSAL MICROPHONE COMPANY
INGLEWOOD, CALIFORNIA



FOREIGN DIVISION: 301 CLAY STREET, SAN FRANCISCO 11, CALIFORNIA .. CANADIAN DIVISION: 560 KING STREET WEST, TORONTO 1, ONTARIO, CANADA

OHMITE RESISTORS

for accurate
trouble-free
SERVICE

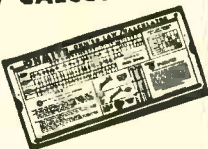


Time-proved, battle-proved, service-proved... Ohmite Brown Devils and Adjustable Divid-ohms are used today in critical war equipment. After Victory . . . these dependable units will again be the favorite of radio servicemen who want and use the best for resistor replacements.

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.
4845 Flournoy Street • Chicago 44, U.S.A.

Be Right with **OHMITE**
RHEOSTATS • RESISTORS • TAP SWITCHES

Multi-Tester (from page 25)

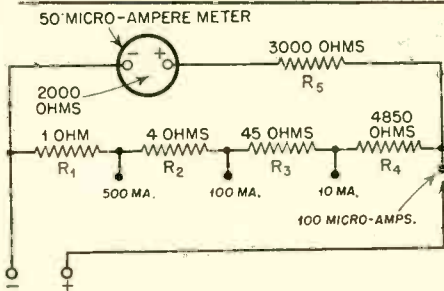


Figure 24

where R_D is the shunt valve for that tap.

Thus for a 0 to 1 milliamperere meter having 33 ohms of resistance and using R_a of 67 ohms, R_m is 100 ohms. $R_{sh} = 25$ ohms for a 0 to 5 milliamperere range. For a 25 milliamperere range,

$$R_D = \frac{25 + 100}{25} = 5 \text{ ohms}$$

(from formula (7))

And for a 100 milliamperere range R_D is 1.25 ohms. Such an arrangement used on the Simpson model 260 is shown in Figure 24.

VOLT-METER RANGE SELECTION

Meter scales are usually calibrated with a guaranteed 2% or 5% accuracy. This should actually be ex-

panded to signify 2% or 5% of the full scale reading. This means that the meter error at any point over its range may be that percentage of the full scale reading, not that percentage at the portion of the scale to which the meter has deflection. Thus a meter calibrated for from 0 to 100 milliampereres may at 100 milliampereres actually signify for a meter of 5% accuracy, either 95 or 105 milliampereres, or any value between. At 10 milliampereres through the metre, scale indication may range from 5 to 15 milliampereres and still be within the rated accuracy of the meter. Most meters are considerably better than that rating implies. It is to be seen from this that greater accuracy is more likely to be found beyond half-scale readings.

To be able to measure any value of a group of voltages at beyond half-scale would thus require no more than a 2-to-1 overlap of ranges. If the number of ranges on the instrument is limited, then the ranges should be so designed that for the usual voltages to be measured the upper half of the scale will be used. For instance, voltages between 100 and 200 should be measured on the 200-volt scale; voltages from 250 to 500 on the 500-volt scale. And note that measuring 100 volts on a 500-volt scale will not be as accurate as measuring 100 volts on a 200-volt scale.

Announcing a change of name!
Henceforth, the Lafayette
Radio Corporation (Chicago and Atlanta)
will be known as the

CONCORD RADIO CORPORATION



The Lafayette Radio Corporation has, for 22 years, been one of the well-known names in radio and electronics. Our policies and our personnel, our reputation for integrity and outstanding service to our customers have enabled us to become one of the nation's great arsenals of radio and electronic equipment. In announcing the change of name to the Concord Radio Corporation, we emphasize that the name only is affected. To our thousands of customers, we promise a continuance and broadening of our organization and our policies. With the advent of new and greater horizons in electronics, the Concord Radio Corporation, will blaze new trails in engineering achievement and customer services. Watch for our future advertisements, and be sure that your name is on our list to receive postwar literature and catalogs.



CONCORD RADIO CORPORATION
901 W. Jackson Blvd. Dept. K-10
Chicago 7, Ill.

Please rush me the new 16-page "Special Flyer" just published by the Concord Radio Corporation.

NAME
ADDRESS
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Just off the Press!

NEW, 16-PAGE "SPECIAL FLYER"
... a last-minute compilation, by
the CONCORD RADIO CORPORATION,
of hard-to-find components and
equipment for industry, service
men, training schools, etc. MAIL
COUPON TODAY.

CONCORD RADIO CORPORATION

Lafayette Radio Corporation

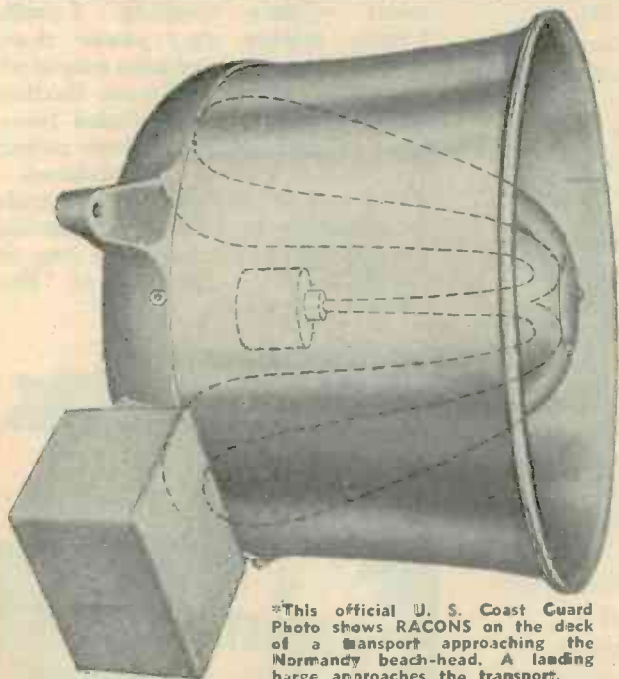
901 W. Jackson Blvd., CHICAGO 7, ILLINOIS ★ 265 Peachtree St., ATLANTA 3, GEORGIA

Radio Service Dealer



RACONS Invaded Normandy*

Official U. S. Coast Guard Photo



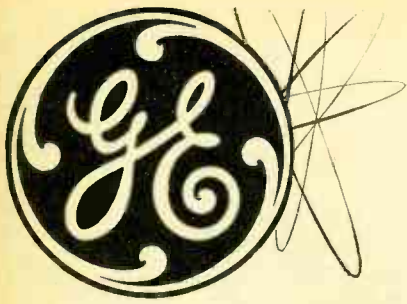
*This official U. S. Coast Guard Photo shows RACONS on the deck of a transport approaching the Normandy beach-head. A landing barge approaches the transport.

THE finest and most dependable air column horns and speakers made . . . RACONS . . . are doing their bit to hasten V-Day. In war plants, aboard Army and Navy vessels, on planes, at training camps and airports many different types of RACON, each ideally suited for its purpose, gives peak efficiency, regardless of weather condition or climate.

Built into RACONS are exclusive patented features found in no other line of sound reproducing equipment. Pioneers in the making of horns and speakers, with a type for every purpose, you can rely upon RACON regardless of your need. Simply tell us what you have in mind.

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RACON ELECTRIC CO. 52 EAST 19th ST. NEW YORK, N. Y.



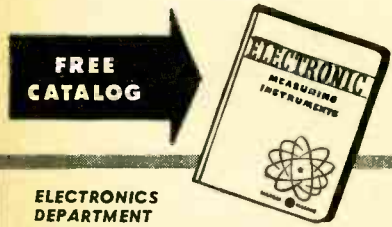
UNIMETER



• Completely portable all-around utility instrument, ideally suited for reliable service work. Large meter calibrated to reduce the error possibility in readings makes the G-E unimeter a popular one with servicemen.

Other General Electric units available for testing electronic circuits and component parts are: audio oscillators, oscilloscopes, condenser resistance bridges, signal generators and other utility test instruments.

For complete details about the new General Electric line of SERVICE TESTING EQUIPMENT, please fill out the coupon below. . . .



**ELECTRONICS DEPARTMENT
GENERAL ELECTRIC CO.
Schenectady, N. Y.**

Please send, without obligation to me, the General Electric Testing Instrument Catalog, (10 loose-leaf), for my information and files.

Name _____
Company _____
Address _____

GENERAL ELECTRIC
164-C10
Electronic Measuring Instruments

EXHIBITORS

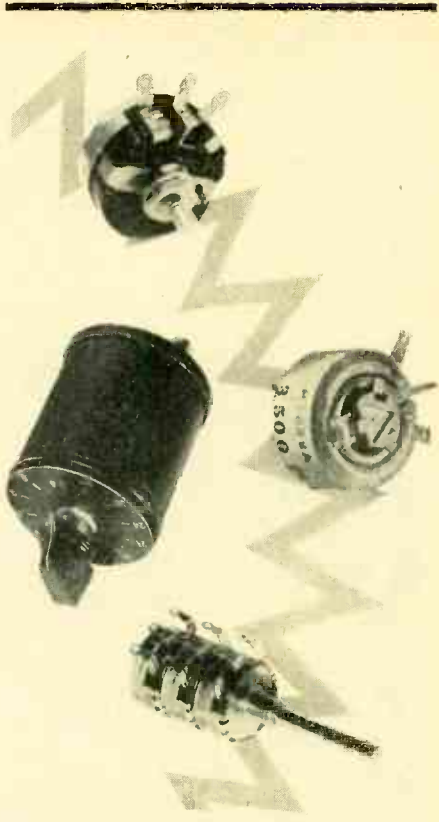
**Electronic Parts & Equipment Industry Conference,
Chicago, Oct. 19 to 21.**

(from page 38)

Booth No.

56. The Brush Development Company
57. Karp Metal Products Co., Inc.
58. Marion Electrical Instrument Co.
59. Freed Transformer Company
60. United Catalog Publishers
61. Wm. Brand & Company
62. Federal Mfg. & Engr. Corp.
63. Electric Soldering Co., Inc.
64. Gudeman Company
65. P. R. Mallory
66. Electro Voice Manufacturing Co.
67. David Bogen Co., Inc.
68. James Miller Mfg. Co.
69. Service & Communications Magazine*
70. Solar Manufacturing Corporation
71. Corning Glass Works
72. American Radio Hardware
73. Radio Essentials, Inc.
74. General Electric Company
75. University Laboratories
76. Radio Mfg. Engineers, Inc.
77. Shallcross Manufacturing Company
78. Taylor Tubes, Inc.
79. Coto-Coil Company, Inc.
80. Audio Devices, Inc.
81. Webster Electric Company
82. Micamold Radio Corporation
83. Vasco Electrical Mfg. Company
84. Precision Apparatus Company
85. Radiart Corporation
86. Sylvania Elec. Products Co.
87. American Phenolic Corporation
88. Ohmite Manufacturing Company
89. Shure Brothers
90. Aerovox Corporation
91. John F. Rider, Publisher
92. RCA Victor Division of RCA
93. E. F. Johnson Company
94. Ward Leonard Electric Company
95. Hickock Electrical Instrument Co.
96. American Condenser Company
97. Clarostat
98. United Transformer Company
99. Insuline Corporation of America, Inc.
100. Meissner Manufacturing Company
101. Jensen Radio Mfg. Company
102. The Hallderson Company
103. Wirt Company
104. Electro Products Laboratories
105. The Erwood Company
106. FM & Television Magazine*
107. Sprague Products Company
108. Talk-A-Phone Manufacturing Co.
109. Quam Nichols Company

* Publishers
(Continued on page 47)



Products of "THE HOUSE OF RESISTORS"

★ Wire-wound or composition-element volume controls, T-pads, L-pads, mixers, etc.; power rheostats; constant-impedance output attenuators; power resistors; flexible resistors and glass-insulated resistors; voltage-divider resistor strips; metal-tube ballasts and resistors—these and other resistors, controls and resistance devices, comprise the exceptionally complete line of CLAROSTAT — products of "The House of Resistors."

★ **Consult
Our Jobber**



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

Radio Service Dealer

In Trade

(from page 36)

Mysing Heads RCA Auto-Radio

Thomas F. Joyce, general manager of RCA Victor's radio, phonograph and television department, announces the appointment of Herman D. Mysing as manager of sales and engineering service for the company's auto radio department, with headquarters in Detroit, where he is widely known in the motor car industry. Formerly Mr. Mysing was assistant chief engineer of Grigsby-Grunow's Majestic radio division.

Award to Westinghouse

High awards—a fourth renewal of the Army-Navy "E"—have been achieved by two plants of the Westinghouse Electric and Manufacturing Company, Philadelphia, Pa. One hundred thousand plants in the country are eligible to try for "E" awards, but only 3,000 (3 per cent) of them have won "E's" and only 176 a fourth renewal.

New Plant

Charles H. Koch, president, announces completion of a new plant at 4427 North Clark Street, Chicago, which will greatly increase the Merit Coil & Transformer Corporation's present capacity for producing precision radio parts.

Col. S. W. Stanley, Signal Corps Chief, Signal Branch, Forward Echelon, Ninth Service Command, who presented the award; James L. Fouch, Universal Microphone Company president, who accepted it; and Lieut. Commander Edwin F. Keyes, USNR, assistant inspector of naval war materials, Los Angeles District, who gave the award citation. Shown left to right.



Pyramided Orders Risky

Don't pyramid orders! Such is the warning issued to radio parts jobbers by Charles Golenpaul who heads the jobber sales for Aerovox Corporation of New Bedford, Mass.

"Of course anyone is certainly justified in getting tired of waiting for

much-needed items these days," admits Charley Golenpaul, "but this is WAR. And the pyramiding of orders by some jobbers is hardly the solution of the problem. It may seem a clever expediting stunt to send the same order to several manufacturers, counting on one or the other for an earlier shipment.

(Continued on page 44)

The Publishers of **RADIO SERVICE DEALER** are proud that over 85% of the Nation's leading Service Dealers are paid subscribers. "RSD" has and will consistently carry exclusive, factual articles that progressive Service Dealers agree are well worth the low subscription price of \$2 for 12 issues or \$3 for 24. A few new subscribers can be accepted. Tell your associates. Meanwhile, renew your own subscription as soon as you are notified it is about to expire. Cowan Pub. Corp., 342 Madison Ave., New York 17, N. Y.



Subscribe NOW to "RSD"

A 1-year subscription to RADIO SERVICE DEALER costs \$2.00—2-year subscription costs \$3.00.

In Trade

(from page 43)

However, this betting on several horses may not work out as intended.

"In the first place you can't fool the manufacturers. Most of them can spot pyramided orders, know who is shopping around for delivery 'breaks.' And then there is such a thing as loyalty in the jobbing business; when the war rush is over, loyal jobbers will remain the favored sons and be treated accordingly.

"In the second place, please remember that all manufacturers truly backing the war effort must average about the same on jobber deliveries. One may do a bit better this month on this item, another on that item, and so on; but as a whole, month after month, most manufacturers will average out about the same.

"Besides, conditions are rapidly changing. The war is reaching a final phase. Parts manufacturers may soon be catching up on their jobber backlog. It is possible that pyramided orders may come home to roost in a sudden flood of shipments and billings—and someone will be hurt. Therefore, please play fair. Play safe. Don't keep on pyramiding those orders!"

Meissner Radio Cabinets

G. V. Rockey, executive vice president, announces that Meissner Manufacturing Co., Chicago and Mt. Carmel, Ill., engaged Frank C. Lee, the furniture and industrial designer, to create deluxe cabinets to house the super ra-



Frank C. Lee

dio-phonograph the company will bring to the upper-income market immediately after the war.

Crockett to Merit Coil

Charles H. Koch, president of Merit Coil & Transformer Corp., Chicago, announces the appointment of John I. Crockett Jr., as sales manager. Previously with Thodarson Electric Mfg. Co., Mr. Crockett brings to Merit a long background of sales and distribution experience.

Although now devoted to the war effort, the company is perfecting plans for post-war manufacturing and distribution. In addition to sales development and the creation of a distributing

organization, Mr. Crockett will also handle all expediting of current production.

Emerson Radio Lauded

Emerson Radio and Phonograph Corporation, New York, received a citation issued by the "Financial World:" "Highest merit award . . . for distinguished achievement in annual reporting . . . in recognition of the excellence of its 1943 Annual Report . . . which was judged as among the most modern from the standpoint of content, typography and format of the 1,000 annual reports examined during 1944."

Fourth "E" to Hallicrafters

The Hallicrafters Co., Chicago, won for the fourth time the Army-Navy Production Award for outstanding achievement in producing materials essential to the war effort. This marks the first time that a manufacturer of radio exclusively has been so recognized.

Notes

Art Cerf & Co., manufacturers' representatives, have taken larger quarters and are now located in the National Newark Bldg., 744 Broad St., Newark 2, N. J.

Universal Microphone Co., Inglewood, Cal., has purchased the physical properties of the plants it has occupied the past twelve years, according to a statement released by James L. Fouch and Cecil L. Sly, president and vice-president, respectively.

Glenn C. Henry, formerly chief of the Audio and Industrial Section of the Radio and Radar Division of the War Production Board, has been appointed to the staff of the Sound Equipment Section of the Radio Corporation of America, in charge of sales of engineered sound systems and components.

Radio and Electronic Book Guide

Reference books on radio and electronics have grown in number, and to aid in the rapid selection of books by title, author, publisher, subject, or application, Allied Radio Corp., Chicago, has released for free distribution a booklet containing a wide selection of publications. Listings cover elementary fundamentals to advanced practices for beginner, student, radio amateur, instructor, technician, service and maintenance man and engineer. For a free copy, address the firm at 833 West Jackson Blvd., Chicago 7, Ill.

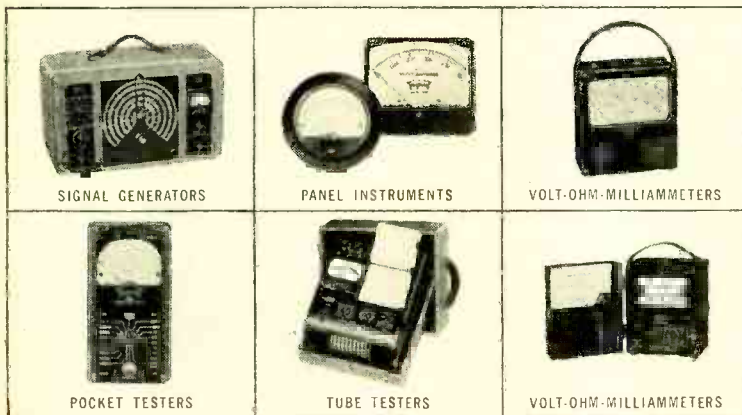
**\$3,000,000,
000 Yearly**

Emerson Radio and Phonograph Corporation's president, Benjamin Abrams, predicts that postwar demand for radios and allied products would result in expansion of the industry's volume to \$3,000,000,000 annually, compared with about \$350,000,000 before the war.

Operating on such an expanded scale, the radio industry will not only be in a position to take back former employees who left to enter the service, but should be able to absorb an additional 500,000 men. These will include those actually engaged in production, as well as thousands of technically trained men of the armed forces who will be particularly fitted for positions

What will you need...

IN THE FIRST SIX POST-WAR MONTHS



✓ CHECK THE TYPES AND QUANTITY

Estimate your future equipment needs and place a tentative post-war order for them with your jobber now. This foresight will enable him to stock the Triplett instruments you will need, and will assure you quicker resumption of civilian business. Give best priority you can obtain to facilitate deliveries as production is available.

Get the complete list of Triplett instruments and radio test equipment.



Triplett
ELECTRICAL INSTRUMENT CO. BLUFFTON, OHIO

Radio Service Dealer

as dealers, salesmen and servicemen.

The radio industry's postwar activity will be more than a temporary spurt. Even operating at an accelerated rate, it will take years to catch up with expected postwar demand. Mr. Abrams estimates that current demand would call for 25,000,000 sets, and that to this will be added a normal demand of 12,000,000 sets per year, to say nothing

of exports which also will be large. This compares with the industry's pre-war capacity of about 16,000,000 sets annually.

Since reconversion in the radio field is a relatively simple matter, civilian production can be resumed shortly after restrictions are lifted and materials are made available. In this there should be no unnecessary delay.

HIRING AID FOR SERVICE DEALERS

Three steps, as foreseen by the government, will take the country to and into V-Day, when full peacetime conversion will be permitted. Step 1—defeat of Germany (referred to as V-E Day). Step 2—defeat of Japan. Step 3—will begin on V-day and will carry us from war to peace and full employment. Restrictions and controls will be taken off, and according to Paul V. McNutt, the following agencies will function to get the utmost distribution of employable men to the employers who can use them best. Service dealers might draw on the agencies for assistants who have had the benefit of intensive military training in radionics, either for the shop, or as experts in selling special items of equipment outside, and also for general over-the-counter selling in the store. Here's how the agencies are expected to function (come V-E Day) for the man who hires and for the man who is hired:

1. A national network of about 1,500 local employment (USES) offices plus over 2,000 traveling units. This will give the widest possible coverage throughout the country for referring displaced workers and veterans to available jobs.

2. A nationwide system of job-clearance whereby local employment offices

are kept notified of jobs in other parts of the country.

Thus radio service and appliance dealers who may list their requirements for labor in their own community will have the benefit of getting their needs broadcast to nearby communities as well, and they can pick the best men for any jobs they may have open. There is something in the new set-up that provides for the voluntary transfer of workers from one area to another, wherever a job opportunity exists for which their training and experience has fitted them.

Anyway, thus spake Mr. McNutt, who is chairman of the War Manpower Commission, at a recent conference of the American Management Association. We've dubbed-in the parts about radio service and appliance dealers.

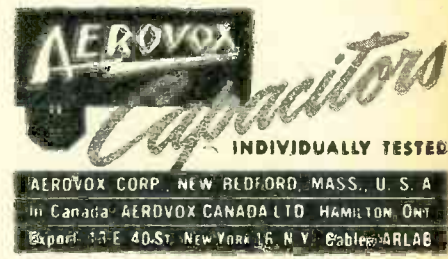
Other rulings: veterans of the present war (and that means radio and communications-trained men) will not be required to get or present statements of availability in order to change jobs. Furthermore, the veterans may be hired without regard to employment ceilings. But—none but veterans of the present war may be (with few exceptions) hired where local employment is at or above the established ceiling.



• These are Aerovox "Victory" capacitors. Paper tubulars and electrolytic tubulars. Available in selected voltage and capacitance values to meet the widest range of servicing requirements with minimum listings.

Used singly or in groups, these handy values can service 90% or better of the usual capacitor replacements, while conserving much critical materials and labor for the urgent needs of our fighting men.

• Ask Our Jobber... Order Aerovox "Victory" capacitors. He'll show you how a mere handful of values can take care of most of your servicing requirements.



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 East Stroudsburg, Pa., for October 5th, 1944.

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 Business Manager 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, Cowan Publishing Corp., 342 Madison Ave., New York 17, N. Y.; Editor, Sanford R. Cowan, 1620 Ocean Ave., Brooklyn 30, N. Y.; Managing Editor, Lewis C. Stone, 235 E. 22nd St., New York 10, N. Y.; Business Manager, S. R. Cowan, Brooklyn, 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, Business Manager.

Sworn to and subscribed before me, this 5th day of October, 1944.

(Seal.) JENE D. STERN, Notary Public.

Kings County, Kings Co. Clk's No. 246; N. Y. Co. Clk's No. 270,

Reg. No. 16786. Commission expires March 30, 1946.

Where Time Doesn't March On . . .



. . . unless you step in now to help men in German prison camps fight that deadly "barbed wire" boredom

THE CLOCK has a hundred hours on its dial and each hour has 600 minutes when you're penned behind barbed wire.

Nothing to see but that wire, the barrack's wall, and a sentry's back. Nothing to hear but the tramp of his feet, the beefs of your comrades.

So you go slowly, grimly, and sometimes not-so-quietly, progressively towards the "barbed wire disease" unless...

Unless you're lucky enough to have the folks back home get behind the War Pri-

soners' Aid (one of the 22 participating agencies of the National War Fund) and provide the money to provide the things to feed the hunger of your heart and soul and mind.

Books and baseballs and tennis rackets. Textbooks and technical equipment so you can continue studies the war interrupted. Grease paint and playscripts for your own camp shows. Games of every sort. Anything and everything it's humanly possible to provide to start Time marching on again.

This is just one of the many vital jobs your contribution helps to take care of —when you support the National War Fund by giving to your New York War Fund. Your dollars go to work on six continents and in ninety-one countries—*including your own*, because this united campaign covers the big home-front needs too.

And don't just give a "token" contribution. The job is too big for that. Give—*really* give! Remember that no matter how much any of us gives in money it's still little compared to what the people you'll help have been giving in "blood, sweat, and tears."

GIVE GENEROUSLY TO YOUR

New York War Fund

REPRESENTING THE National War Fund
AND 9 LOCAL WAR SERVICE AGENCIES



EXHIBITORS

Electronic Parts & Equipment Industry Conference, Chicago, Oct. 19 to 21.

(from page 42)

Booth No.

110. Raytheon Manufacturing Company
111. Belden Manufacturing Company
112. Centralab
113. The Hallicrafters Company
114. Standard Transformer
115. Radio & Electronic Jobber News
116. United Electronics Company
117. Radiotone, Inc.
118. Barker & Williamson Company
119. Technical Appliance Corporation
120. Mark Simpson Manufacturing Co.
121. Utah Radio Products Company
122. Eitel-McCullough, Inc.
123. Hammarlund Mfg. Company
124. Communication Products Co., Inc.
125. General Cement Mfg. Co.
126. Bud Radio, Inc.
127. Atlas Sound Corporation
128. Park Metalware Company, Inc.
129. Cinaudagraph Speakers
130. Bell Sound Systems
131. Dial Light Company of America, Inc.
132. The Turner Company
133. Cornell Dubilier Elec. Corp.
134. The Capacitron Company
135. International Resistance Co.
136. Electronic Corporation of America
137. Radercraft Publications, Inc.*
138. Worner Electronic Devices
139. Haines Manufacturing
140. Burgess Battery Company
141. Weston Electrical Instrument Corp.
142. Alpha Wire Corporation
143. Universal Microphone Company
144. Lectrohm, Inc.
145. Harry A. Ungar, Inc.
146. American Radio Relay League
147. Racon Electric Co., Inc.
148. Philmore Manufacturing Company
149. Thordarson Elec. Mfg. Co.
150. The Wilcox-Gay Corporation
151. Bliley Electric Company
152. Ware Products Corporation
153. DuMont Electric Company
154. National Union Radio Company
155. Carron Manufacturing Company
156. Carter Motor Company
157. The Triplett Electrical Instr. Co.
158. Continental Carbon, Inc.
159. J. F. D. Manufacturing Company
- A National Electronic Distributors Assn.

* Publishers

(Continued on page 42)

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GENERAL CEMENT
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- Twenty 2 oz. Bottles
- Indexed Metal Rack
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A Complete Assortment of Cements and Chemicals

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PM SPEAKERS

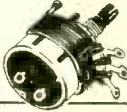
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Men in the News



Sol W. Berk

Lafayette Changes to Concord Radio

A change in name from the Lafayette Radio Corporation of Chicago and Atlanta, to the Concord Radio Corporation is announced by Samuel J. Novick. From the executives down the personnel will remain the same. Sol W. Berk is manager. No changes will be made in policy or service. New electronic developments will soon be announced by the company. To make sure to get current and postwar catalogs and announcements, dealers might address the company (new name) 901 West Jackson Blvd., Chicago 7, Ill.

Meissner Appoints Hutmacher

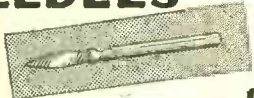
G. V. Rokey, executive vice president, announces appointment of Ray R. Hutmacher as district manager of the Meissner Manufacturing Co., Mt. Carmel and Chicago, Ill. Mr. Hutmacher began his career in the radio business in 1926, and recently resigned as manager of the Midwestern division of Utah Radio Products Co., Chicago. He will make his headquarters at the company's Chicago office, which is headed by Oden F. Jester, vice president.



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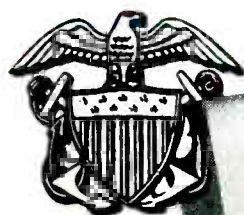
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Extraordinary

RECOGNITION



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prosecution of the war. The Galvin Mfg. Corporation, manufacturers of Motorola F-M radio for home and car, is proud of its membership in the Radar-Radio Industries of Chicago . . . and also proud of the part it has been privileged to play in the winning of this signal honor.

Since considerably before Pearl Harbor, Motorola has designed, built and delivered military radio communications in great quantity among which are the famous "Handie Talkie" (an exclusive Motorola Radio First) and the equally celebrated F-M "Walkie Talkie." When victory has been won Motorola's greatly expanded production facilities will be available for the immediate production of Home and Car Radio, Portables and Automatic Phonographs.

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GALVIN MANUFACTURING CORPORATION, CHICAGO 51

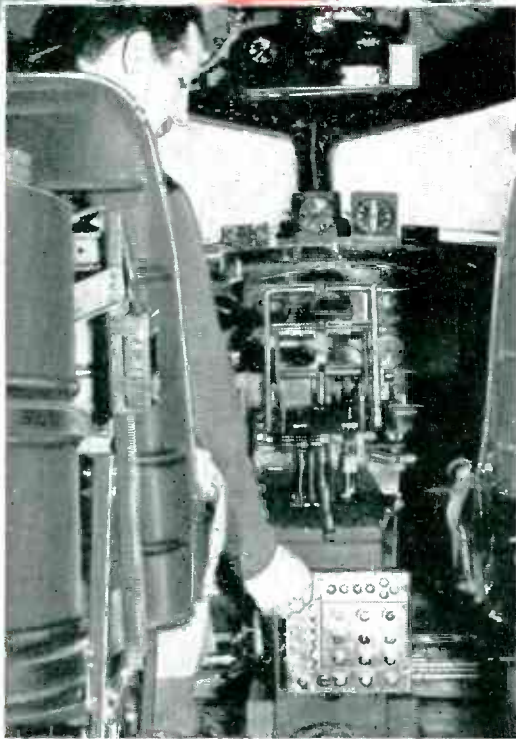
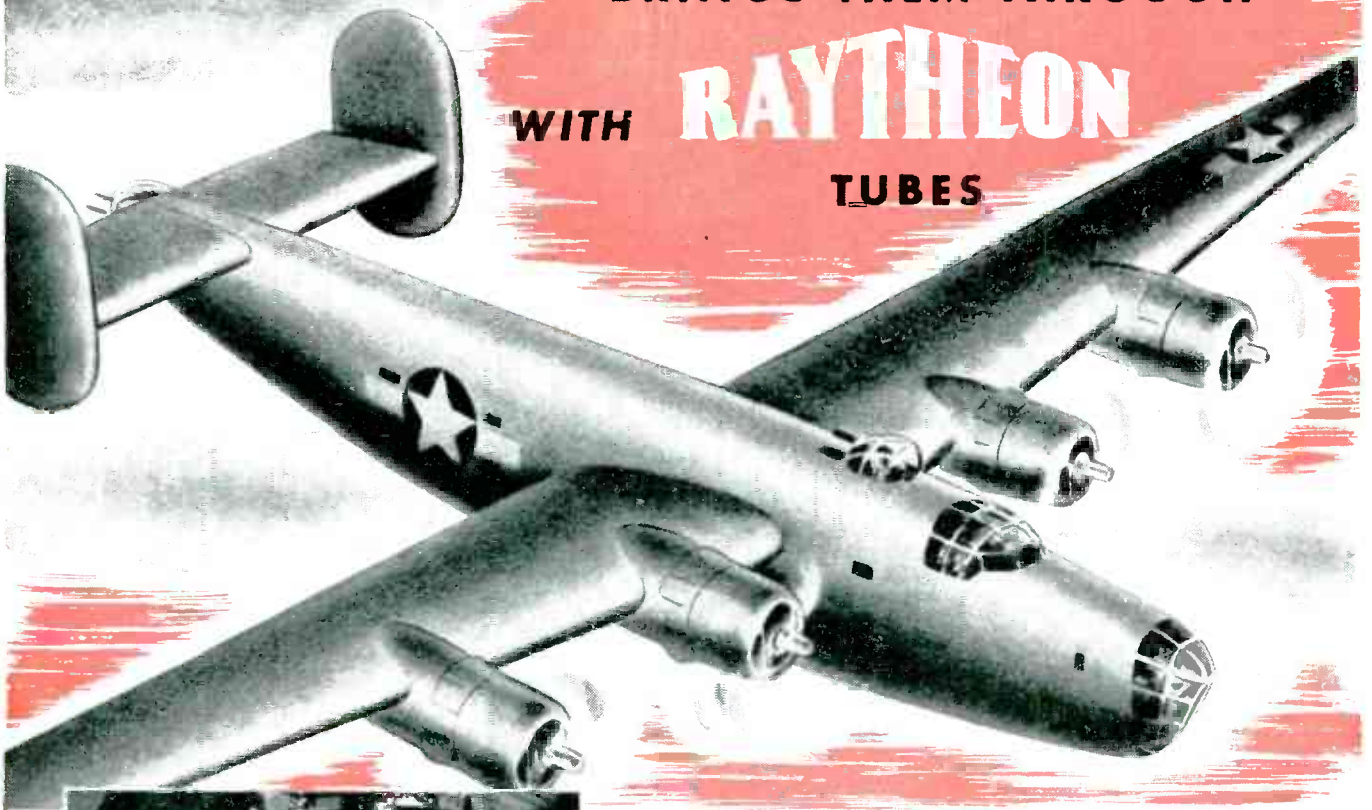


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