

JULY
1941

Radio

SERVICE DEALER

Beginning—

Articles by
RIDER

A Column by
KARL KOPETZKY

RSA NEWS ITEMS



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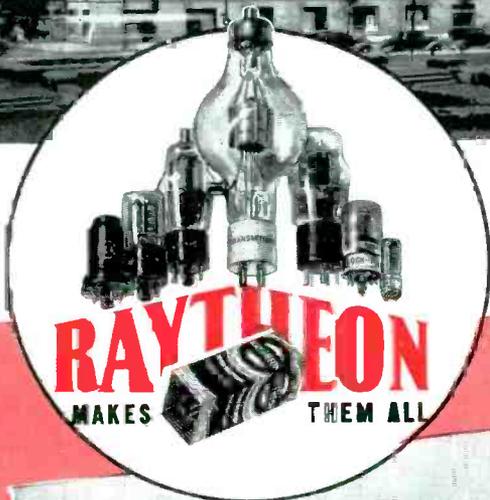
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Radio SERVICE-DEALER

SOUNDMAN AND JOBBER

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Cover Photo



★ John F. Rider, the dean of servicemen, who has in preparation a series of articles for readers of Radio Service-Dealer. Turn to page 4 for the first in the series.

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S. R. COWAN, ADV. MANAGER

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VOL. 2 No. 7 ★ JULY, 1941

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...LOOK

...BUY

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The world's finest line of air-column and horn sound reproducers (RACONS) cost no more than less efficient and dependable brands. In fact, over a period of time, RACONS cost Soundmen and Sound Renting Organizations less money and they bring a greater profit. That is why all leading Soundmen specify, insist on and use RACONS exclusively.

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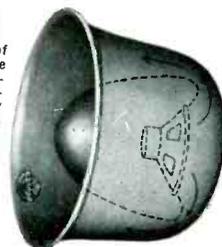


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TRANSIENTS ☆

ALL SERVICEMEN have, right now, an opportunity that will never again present itself. It is the opportunity to raise the economic level of radio servicing, to give it the dignity of a profession—which it rightly is—and to provide a permanent security against unfair competition. In short, it is the opportunity for the serviceman to finally find his voice—and use it.

For the second time in history the law of supply and demand is running in favor of the serviceman. The national defense program has brought on a shortage of competent radio technicians in the commercial field. Presently, with the curtailment in set production, there will be a large increase in the number of receivers up for service as against the number of new receivers sold.

For the first time in history the radio serviceman is commanding respect. His importance in the eyes of the governments of the United States and Great Britain has become apparent to the public. The "radio mechanic down the block" is now the chap who, if called upon, could maintain military radio equipment and keep these English electronic plane spotters running without interruption. In short, radio servicemen are at a premium, and their stock has gone up in the public eye.

The principal advantage to be gained from this opportunity is not the making of hay while the sun shines, but, rather, a consolidation of the gains now within reach, by the process of establishing, nationally, fair-trade practices, a reasonable scale of service charges, and some element of administration that will serve both to coordinate and back up servicing activities.

But, as has been demonstrated time and again, in this and in other fields, nothing short of a national organization can accomplish the desired results. Nothing short of a national organization can have a voice of sufficient "numerical authority" to accomplish desirable reforms and make them stick. Local organizations serve a purpose; are, on the whole, desirable and worth while, and deserve support, but over and above these local groups, and independent of them, a national organization, dedicated to the individual rather than the group, should be supported.

This idea of a national organization representing servicemen as individuals is a new interpretation with far-reaching possibilities. Its fundamental basis does not disturb existing local groups, nor do its aims in any way compete with them. The individual serviceman is not called upon to divide his allegiance between opposite poles.

Sensing the opportunity now open to all servicemen, the Radio Servicemen of America, Inc., has revised its policies for the purpose of promoting this desirable end. Sponsored by the RMA, the NAB, and the Sales Managers Clubs, it has the backing of the entire radio industry. Under the new plan, it is designed to work for you, as an individual, by operating collectively, in the manner of a democratic government.

We urge all servicemen to join the RSA now, that they may benefit by the improvements that are to be had through united effort.

B-2 PARTS PRIORITY

ON MAY 29th, 1941, the Publisher of RADIO SERVICE-DEALER applied to the Office of Production Management, Division of Priorities on Ferrous and Non-Ferrous Metals, for a ruling on preference ratings. He inquired whether firms engaged in manufacturing radio tubes, parts, testing and sound equipment which would be used solely for the repair and maintenance of existing radio apparatus, signaling devices, safety control and such electronic equipment might apply to OPM for needed metals on a preferred priority rating, such as B-2 for aluminum, even though the Radio Industry as a whole had been placed in classification B-7. On June 12th, OPM replied that radio replacement parts manufacturers may apply to their regular materials suppliers (not to the Priorities Board) and ask them to assign them the preferred B-2 rating so their orders might be filled within the limits of the available supply. In other words, OPM recognizes the importance of electronic maintenance work and is endeavoring to allow replacement parts manufacturers to obtain, wherever possible, sufficient materials necessary for the uninterrupted manufacture of replacement tubes, parts and test equipment needed to keep existing radio apparatus in operation.

RIDER on Test Equipment

Wanted—Specifications!

John F. Rider

IF we were to tabulate all of the problems which are said to be part and parcel of the servicing industry, it would make quite a formidable list and cover quite a number of different subjects. Within this group of titles there would be one which we feel deserves some consideration at this time. In fact, it is surprising to note how little attention has been paid to the subject over a period of many years.

We are referring to test equipment: not the sale or the design of such apparatus, but instead the conditions which surround the purchasing of such devices by the servicing industry.

As a general rule, engineers buy whatever testing apparatus they need after due consideration of the specifications of the apparatus and the reputation of the concern making the claims. But in order for such a procedure to be possible, a definite prerequisite exists: the ability to interpret the specifications so as to be able to evaluate the merits of the various claims being made. Furthermore, it is also essential that the prospective purchaser have a general idea of the capabilities of the device or devices he contemplates purchasing, as well as the requirements of the work to be done.

IN THE DARK

With the foregoing as our basis, we cannot help commenting upon a strangely peculiar situation which exists in the United States with respect to the general run of radio servicemen and test equipment manufacturers. We are referring to the fact that, due to a combination of circumstances and conditions, much confusion exists on the part of servicemen when it comes to the buying of test equipment. In making this statement we are fully aware of the many millions of dollars which have been spent for test equipment by radio servicemen. It does not mean, however, that the purchasing of such apparatus has not been accompanied by confusion, for if an individual requires a new piece of test equipment, he must acquire it, irrespective of how confused he may be in the ef-

fort to make up his mind as to what best suits his needs.

To find the reasons for the existence of such a condition is not difficult. Both servicemen and test equipment manufacturers contribute to it. The former—and we say this without in any way intending it to be an indictment—have helped create the situation by taking their test equipment for granted. They have seldom considered

dividual to make up his mind. In many respects it is a safe bet to assume that every organization with a reputation to maintain, realizes the benefits which accrue from the manufacture of a satisfactory and acceptable product. But no matter how fine the reputation of a manufacturer, it is no assurance that each and every one of his products is exactly that required to fill a certain need, or that it is representative of the most modern design.

Modern-day radio test equipment while somewhat similar in design when intended for like application, is not necessarily identical when produced by different manufacturers. They differ in specific design and price, in the conditions under which they can be used, and the conditions they create when used. This cannot be helped or avoided just so long as they are not identical. It therefore behooves the serviceman to be able to make whatever comparisons are necessary; to recognize the salient features of each brand of product, and to appreciate which of the claims being made has real significance and which are simply non-essential items used to make the list of so-called features just a little bit longer. It is of the utmost importance that the prospective customer select the correct and important items for comparison, for it is very easy to be misled in forming an opinion by selecting some single item as a basis of comparison, without realizing all of the other related factors.

Because of the conditions set forth above, we find that servicemen are not only unfamiliar with what is inside of their test units, what makes them work, and what is a correct basis of comparison, but also, as a rule, are not really cognizant of what they are buying. Moreover, few can really get their full money's worth from what they have bought.

INSUFFICIENT DATA

As we said before, this condition is

THE RIDER SERIES

★ We are pleased to offer our readers the first of a series of articles prepared exclusively for Radio Service-Dealer by John F. Rider. Those to follow will more than likely be of a technical nature, but may on occasion deal with reforms, as does the present article. But whatever the subject may be, it will carry with it the teachings and the convictions of a man who, more than any other, is qualified to speak for the servicing field.

—The Editor

it worthwhile to acquaint themselves with the requirements of test apparatus—with what is inside the equipment they have owned—with the fundamentals of operation of such apparatus as is needed by the average radio service shop. The consequence of all of this has been the purchasing of test equipment in accordance with the reputation of the manufacturer, the preference of the jobber who is selling a certain particular line, or any one of a number of other reasons, none of which included that basic and most vital condition; namely, a mental comparison of the capabilities of the apparatus in accordance with the specifications and a full realization of what these specifications mean.

Now, we have no criticism to make about the importance of the manufacturer's reputation in causing an in-

the result of a combination of events and the manufacturers also have a share in the creation of this responsibility. In the first place, the lack of full and complete specifications of apparatus in advertising and sales literature is due criticism with full justification. Now and then we find exceptions to this rule, but in the majority of cases that which is offered as descriptive specifications intended to portray the operating capabilities of equipment are far too meagre and leave very much unsaid; in fact, too much unsaid and usually of that character which tends to create confusion.

In this respect foreign manufacturers are much more advanced. Whether it is a code which exists between them, or whether it is merely that they have the courage to state facts as they are and stick their necks out when the occasion calls for it, the specifications they publish state the limitations as well as the salient features.

Some such step has been needed in the United States for many years. The publication of instruction bulletins here seems to be founded upon a very peculiar basis. Upon what ground an organization can justify the publication of an instruction bulletin covering a piece of test equipment, without including a description of what is inside the apparatus, the specifications, the limitations, service data, and the schematic, is difficult to understand. A serviceman spends from \$35 to perhaps \$80 or \$90 for a piece of equipment and he is not even permitted to know what is inside that which he has bought and owns!

To say the least, such acts are certainly not conducive to either the advancement of knowledge or the creation of a desire on the part of the serviceman to become familiar with what he owns. Nor does it aid him in getting his money's worth or, for that matter, the longest operating life from his equipment.

We realize that some test-equipment manufacturers who follow this practice may construe these words as condemnation. Such is not intended, but it would prove very illuminating to any of these manufacturers to be present when a serviceman finds that one of the manufacturer's units is not working properly, does not have all the data he should have and the nearest man who is familiar with what is inside and the required operating conditions, is 1000 or more miles away.

It has been said that the reason for not publishing all of the specifications covering a piece of test equipment is that servicemen do not understand them. To us that is a weak excuse on a number of counts. Maybe they do not understand the full meaning of all of the terms, but being prospective

customers, they are entitled to know *everything* about what they buy. Maybe the serviceman does not understand what is being said, but when that realization dawns upon him, he'll make it his business to find out and in that way will expand his knowledge. Sooner or later that specification which is not given will become important when the unit is being used, either as a limiting agency controlling the application of the device or as a condition which will lead to wrong decisions. To avoid both of these and give the customer his just due, all specifications should be published.

Then again, it is said that the competitive situation tends to keep manufacturers from giving all specifications, particularly when the selling price of the device is comparatively low. The specification left out, because of the limitations imposed by the low selling price, does not appear as attractive as

SAVE OLD ALUMINUM!

★ P. R. Mallory & Company are using as a slogan, "Save your old aluminum parts—it is patriotic to contribute them to National Defense." We are sure all servicemen will applaud the suggestion and start digging in their junk piles for old electrolytics, variable condensers, shields, control shafts, etc. Gather together your old aluminum parts now, for collections are soon to be made in all localities.

—The Editor

it should be. It is feared that publication of such data is "sticking one's chin out" for a knockout punch by a competitor.

That argument doesn't hold much water, for if it is a weakness in the design, it should be corrected, particularly if a competitor making a product in the same price class has done something to overcome that weakness. If it is a weakness due to the low price and is present in all makes in that price range and general similarity of design, then it applies to all and is a general characteristic. If, however, it is a failing in design which is native to that one unit only, then hiding this information without attempting to correct it seems to us to be on that side of the mountain which does not get the sun.

After all, test units are intended to give the user information about other devices so that he can establish the location and nature of the defect of that which is being checked. Any attempt to becloud the issue merely places a limitation on the equipment.

SPECIFIC EXAMPLES

In line with the general subject of specifications, it seems to us that even in those specifications which are given, it might be better if they were more specific.

Take, as an example, the subject of test oscillators. Some figure is given which states the minimum and maximum limits of the output voltage available through the attenuator. Sometimes the minimum is .5 microvolt and sometimes it is 1.0 microvolt. Now, 1.0 microvolt is a pretty small amount of signal voltage and it would be very beneficial to the owner of such a device to know over what frequency ranges he can attenuate to such a low figure. While it is true that local noise levels may prevent operation at such low signal levels, it is also possible that leakage on some of the bands may be several times 1.0 microvolt, so that it is impossible to attenuate the output of the test oscillator to the rated figure.

But few manufacturers want to talk about leakage, at least not in relation to the comparatively inexpensive signal generators. Some manufacturers state that "leakage is kept down to a minimum." That may be true, but if there is leakage, though it may be minimum, what does it do to the low limit of the signal output and what does it do to the man who thinks that the receiver which he is servicing has a sensitivity equal to that indicated upon the signal source output control? And, in the end, who does it fool? No one! More than one receiver has been serviced and found to have had insufficient sensitivity back in the home, whereas in the shop, working with the local test oscillator, it packed an awful wallop. We'll never forget a few instances several years ago, when a certain test oscillator leaked about 250 microvolts over the entire broadcast band!

Speaking about output voltages and output attenuators, the specifications should state whether or not the range of output voltages stipulated over the broadcast and i-f bands apply to the high-frequency bands, and if not, then what these voltages are. Also, the nature of the design of the attenuator should be stated, as to whether or not proper provision is made to avoid leakage between the sections of the multiplier. Moreover, particularly in the inexpensive signal units wherein buffer amplifiers are not used, the extent of interaction between the attenuator control setting and the frequency should be specified.

Concerning frequency calibration, it is interesting to know whether or not, or to what extent, the rated degree of

(Continued on page 15)

Serviceman's Diary

J. P. Hollister

TUESDAY—Jerry and I had just about finished sweeping out the shop this morning when Blondie breezed in. I thought at first she was one of those Campfire Girls—she wore a khaki uniform—but, you know, most girl scouts are just kids of fourteen or thereabouts, and Blondie looked to be around twenty. Not that I gave too much thought to it at the moment; you take one look at Blondie and you forget what she's wearing. All you see are two big, round, blue eyes, a tiny up-tilted nose, and a cute little mouth which seems to pout a bit. So you take another look—and another.

I was pushing the big Stromberg combination into position when she strolled over, placed a tiny hand on my arm, and looked up to me with a smile.

"Would you please take me down into your cellar?" she said.

"Well, really!" I exclaimed, "I'm not in the habit of—"

"Don't be alarmed," she broke in, "I'm just making a survey for the town. You see (she pointed to the initials ARW on her round cap) I'm the Air Raid Warden for this block and I want to familiarize myself with our facilities. Not that I expect your cellar will afford much protection in its present condition—"

"Now, see here, miss," I protested, "after all, you haven't seen the cellar yet, and I can assure you you'll be more than pleased. It's cool in summer, warm in winter, and water never leaks in. Not that it's completely dry in every particular. You see, we have a little bar set up at one end—"

"Just exactly what has the bar to do with bomb protection?" she interrupted.

"Plenty," I said. "I can guarantee that after drinking one of my Zombies,

even the biggest bomb wouldn't bother you."

That sort of held her for a moment, so I lifted the trap door leading to the cellar stairs and led her below. It's a pretty big basement which we use largely for storage, though there are a few work benches. But it's not ventilated and there are no windows. And there aren't enough lights strung around.

At the bottom of the stairs, I waved an arm toward a group of consoles lined up along the side wall.

"At the right," I pointed out, "you see a gathering of Majestic 70's, flanked on one side by two prehistoric Brunswick Panatropes; on the other by four Atwater Kents in Pooley cabinets. All are defunct. The intestines have been removed from some, a few legs have been sawed off, and the tubes have served nobly as pigeons for our rifle club."

We moved on to the far end of the first room.

"Here," I indicated, "stands the remains of a Bosch Highboy. This should be extremely useful during the present emergency. The chassis is known as the Armored Cruiser. Though it won't fire a salvo, you will note that the legs are high enough so that any average woman who stays on a reducing diet can crawl under and be protected—"

"Thank you very much," she said. "And now I must be going—"

"Wait!" I interrupted. "You haven't seen the bar yet."

I switched on the light for the end room and we stepped in. It is pretty nicely fixed up, if I do say it, with three bridge tables and four high stools around the small bar. And it's quiet there. Even though Jerry was playing the demonstrator set upstairs at pretty fair volume, you couldn't make out the words of the announcer.

I walked in and went behind the bar. She climbed up on one of the stools.

"How quiet and restful it is here!" she murmured.

I was about to reply when I noticed a look of horror spreading over her face.

"Listen!" she gasped.

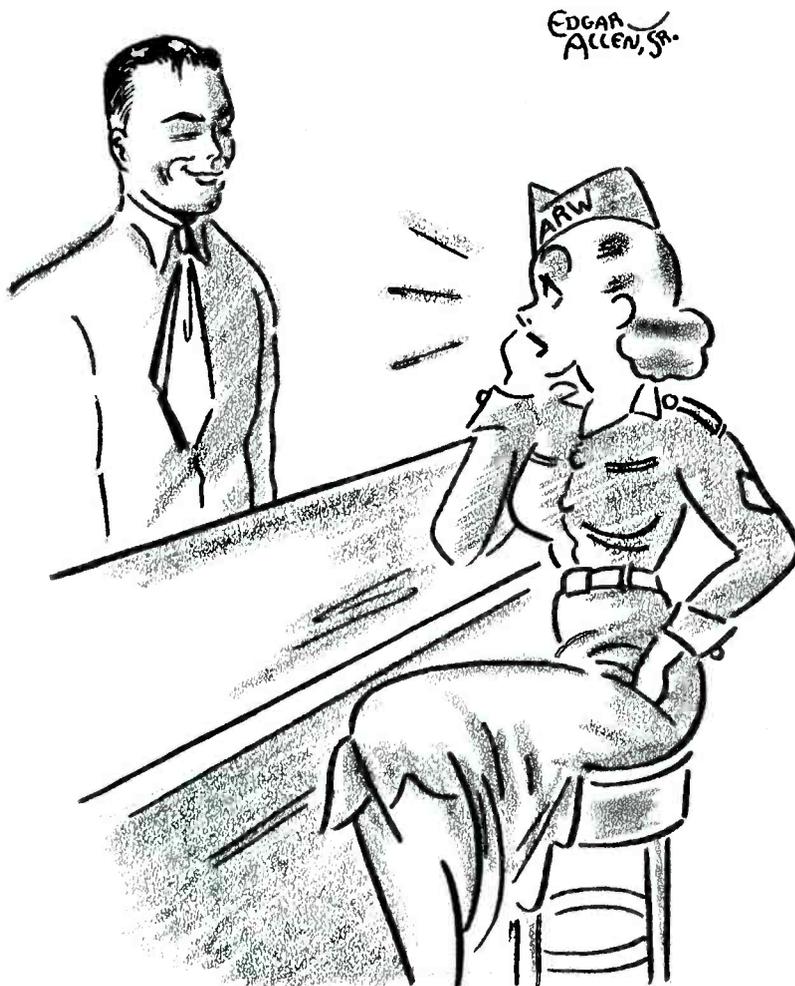
"We could hear faintly the sound of a siren.

"Just another fire," I assured her.

"No, no! It's the air raid warning! Let me out of here. Quick!"

"Take it easy," I said, soothingly. "After all, you've already saved me."

(Continued on page 16)



"Listen!" she gasped. We could hear faintly the sound of a siren.

The Show In Review

THE radio industry, with a record-breaking attendance at the 17th annual convention of the Radio Manufacturers Association and National Radio Parts Show at the Stevens Hotel in Chicago, June 10-13, rallied to the support of the national defense program and to meet the tremendous priorities and other problems ahead. Two main objectives, in the many addresses and meetings, definitely appeared to be the placement of the industry's vast facilities in larger measure for national defense, and to secure wider recognition of radio as an essential defense service of public communication and information.

Several hundred manufacturers and thousands of distributors, dealers and servicemen were in attendance at the Chicago convention and meetings of RMA, the Sales Managers Clubs, National Radio Parts Distributors Association, the Radio Servicemen of America, and other allied organizations. The big social event was the RMA industry banquet, with a record attendance of over 700. Distributors, dealers and servicemen were attracted to the annual National Radio Parts Show, filling the Exhibition Hall of the Stevens Hotel. The exhibition was

☆ **INDUSTRY BEAVERS FOR NATIONAL DEFENSE** ★ **MATERIAL PRIORITIES AFFECT DESIGN & PRODUCTION** ★ **RSA REVISED POLICIES TO BENEFIT INDIVIDUAL SERVICERS**

again under the able management of Ken Hathaway.

NRPDA

Meetings of the National Radio Parts Distributors Association were held during the convention, and the group reorganized, with George Barbey, of Reading, Pa., serving as the newly-elected president.

It has long been Mr. Barbey's aim to see the parts jobbing business placed on a higher plane, with definite standards pacing the field. These commendable aims have been translated into the set policy of the NRPDA in its reorganized form.

RSA

The Radio Servicemen of America, Inc., elected new officers and revised some of its policies. The RSA is now headed by Ken Vaughan, with Don Stover acting as Executive Secretary—both men giving of their time without compensation.

National Headquarters have been moved to Freeport, Ill., from which point Mr. Stover is conducting the association's business.

Backed by the RMA, the Sales Managers Clubs, and NAB, and at the point of instituting an extensive membership campaign, the opinion is held that the RSA will become a strong and beneficial force operating to support the serviceman and tie him in closer with the industry as a whole.

RADIO AND DEFENSE

Recognition of radio in its communications service as an essential instrumentality of defense was stressed by RMA President Knowlson in addressing the annual RMA membership luncheon on June 11.

Said Mr. Knowlson in part: "Radio receivers which look so innocent are no mere luxuries—they are one of the most merciless weapons of modern warfare. Radio's value of morale is recognized as one of the great weapons of war-making today . . ."

"The statistics of our own country show the terrific importance of radio in the dissemination of news and the forming of public opinion. The 50 million sets in operation show the tremendous hold that radio has . . ."

That priorities constitute the number one problem of all civilian industries was stated by Chairman Galvin of the RMA Priorities Committee in addressing the Association's membership.

Said Mr. Galvin, "Our shortages curtailing production today are not nearly as serious as they will be in several months to come. . . . I don't despair of the prospects of our continuation of the manufacture of radio, but I do believe we are going to be curtailed in the future in the making of as many radios as a lot of us would like."

RMA MATERIAL BUREAU

Of wide interest and importance is the establishment in the field of a review body dedicated to the more efficient use of radio materials and designs. In connection with the RMA

(Continued on page 13)

"HOMER G. SNOOPSHAW" AT RADIO SHOW



As previously advertised, the Burgess Battery Company's trade character, "Homer G. Snoopshaw, B.R.S.", was at the show in person. Visitors to the Burgess booth were entertained in grand style by Homer and presented with a "personally autographed" copy of the "Burgess Replacement Guide". The Burgess Company promises to keep Homer on the job as long as dealers continue to need his help.

SHOW LITERATURE FOR THE SERVICEMAN

Aerovox—1941 catalog of condensers, resistors and test instruments. Bulletins on Model 95 L-C Checker and the Aerovox Capacity and Resistance Bridge. Aerovox Corporation, New Bedford, Mass.

Alliance—Catalog sheets on Even-Speed phonograph motors. Also Model K shaded pole induction motor. Alliance Mfg. Co., Alliance, Ohio.

Alpha—1941 catalog of wire products, aerial kits, ground clamps, etc. Alpha Wire Corp., 50 Howard St., New York, N. Y.

Amperite—1941 catalog of dynamic and velocity microphones and microphone accessories. *Featured*—The P. G. Uni-Directional Dynamic Mike. Amperite Company, 561 Broadway, New York, N. Y.

ARRCO—Catalog No. 42, of 34 pages, covering complete line of radio hardware for construction and replacement work. American Radio Hardware Co., Inc., 476 Broadway, New York, N. Y.

Astatic—Catalog No. 41, covering microphones, phonograph pickups, recording heads and accessories. *Featured*—Low Pressure Crystal Pickups. The Astatic Corp., Youngstown, Ohio.

Atlas—Catalog F-41, covering projectors, driver units, parabolic baffles, etc. Atlas Sound Corp., 1443 39th St., Brooklyn, N. Y.

ATR—Catalog No. 141, covering vibrators, vibrator-operated and rectifier power supplies. Also Vibrator Guide No. 240 covering replacement models. *Featured*—Portable Receiver Inverter for use in cars. American Television & Radio Co., St. Paul, Minn.

Audio Products—Folders on "Audiodiscs," "Chip Chaser," "Fun with a Recorder," "Sound Effects Kit," and "How to Make Good Recordings." Audio Devices, Inc., 1600 Broadway, New York, N. Y.

Belden—Catalog 841, of 8 pages, covering the complete line of Belden wire products and accessories for radio work. *Featured*—"Clear Channel" Antenna System for all a-m and f-m bands. Belden Mfg. Co., 4647 W. Van Buren St., Chicago, Ill.

Bliley—Catalog G-12, covering quartz crystals for general communication frequencies. Folder covering quartz crystals for amateur frequencies. Engineering Bulletin E-7 covering the construction of a dual-frequency crystal calibrator for amateurs and servicemen. Bliley Electric Co., Erie, Pa.

Bogan—The "Blue Book" of Sound Equipment, covering the complete line of Bogan p-a systems and accessories. Centralized Sound Systems, covering equipment for schools, hotels, etc. Industrial Paging Systems, a catalog of intercommunicators. *Featured*—Model PV20 High-Fidelity Amplifier, with volume expansion, for mike and phonograph. David Bogen Co., Inc., 663 Broadway, New York, N. Y.

Brush—Bulletin on Brush Crystal Headphones. Catalog Sheets on Brush PL-20 & PL-25 Crystal Pickups, SS-1J Hushatone, and RC-20 Crystal Cutting Head. The Brush Development Co., 3333 Perkins Ave., Cleveland, Ohio.

Bud—General Catalog No. 241 of radio parts for all applications. Contains 40 pages. Bud Radio, Inc., Cleveland, Ohio.

Burgess—Revised Edition (Issued June, 1941) of Burgess Replacement Guide covering batteries for portables, battery-operated home sets, farm radios, and battery-operated test instruments. Burgess Battery Co., Freeport, Ill.

Carron—1941 catalog of replacement parts for speakers, magnetic phono pickups and radio receivers. *Featured*—Adjustable Universal Coils for receivers. Carron Mfg. Co., 415 S. Aberdeen St., Chicago, Ill.

Centralab—Catalog No. 23, of 12 pages, covering the line of controls, resistors, trimmers, selector switches and ceramic capacitors. Separate catalog sheets on Low Capacity Lever Action Switches, Ceramic Capacitors, Ceramic Trimmers, Ceramic Fixed Resistors, Variable Resistors, and the new Type W Selector Switches. *Featured*—Centralab Adashaft Volume Control Kit. Centralab, 900 E. Keefe Ave., Milwaukee, Wis.

Challenger—Catalog of Challenger amplifiers and sound systems. Challenger Amplifier Co., 230 Mercer St., New York, N. Y.

Cinaudagraph—New 8-page catalog of p-m and electrodynamic speakers, air column projectors, and woofer-tweeter units. *Featured*—Catalog sheet on new Cinaxial Speaker System for wide-range applications. Cinaudagraph Speakers, Inc., 921 W. Van Buren St., Chicago, Ill.

Clarostat—Catalog sheets on Clarostat volume controls, rheostats, rotary switches, wire-wound resistors, line-voltage regulators, etc. *Featured*—Clarostat Power Resistor Decade Box, and Clarostat Tube Type and Line Cord Resistor Tester. Also the Sixth Edition of the Clarostat Service Manual, of 96 pages—a guide to replacement controls. Clarostat Mfg. Co., Inc., 285 N. 6th St., Brooklyn, N. Y.

Continental Carbon—A 6-page catalog of resistors, electrolytics, spark-plug suppressors and interference filters. Continental Carbon, Inc., 13900 Lorain Ave., Cleveland, Ohio.

Continental Electric—Catalog sheets on the Cetron photo cells and Cetron mercury rectifiers. Continental Electric Co., Geneva, Ill.

Cornell-Dubilier—1941 Abridged Catalog No. 185A of mica, paper, dykanol and wet and dry electrolytic capacitors. Also Catalog No. 160-T of Radio Transmitting Capacitors. Cornell-Dubilier Electric Corp., South Plainfield, N. J.

Cunningham—Radio Tube Sales Aid Catalog, for dealers and servicemen. RCA Manufacturing Co., Inc., Camden, N. J.

DeJur—Catalog I-61 covering the company's line of current and voltage meters for testing and measuring purposes. DeJur-Amsco Corp., Shelton, Conn.

Drake—Catalog of radio soldering irons and heat controls. *Featured*—the No. 3 Midget Iron, with 1/2" tip. Drake Electric Works, Inc., 3656 Lincoln Ave., Chicago, Ill.

Eicor—Catalog sheet on electric power plants, converters and dynamotors. Eicor, 1060 W. Adams St., Chicago, Ill.

Electro-Voice—Catalog sheet on carbon, dynamic and velocity microphones, microphone accessories and matching transformers. Electro-Voice Mfg. Co., Inc., 1239 South Bend Ave., South Bend, Ind.

Erwood—Catalog 641, of 12 pages, covering the complete line of Erwood Sound Equipment. *Featured*—The Erwood 12-Watt Multiple Microphone Public-Address Systems. Erwood Sound Equipment Co., 223 W. Erie St., Chicago, Ill.

Esico—Catalog sheets on soldering irons, solder pots and thermostatic control stands. Electric Soldering Iron Co., Inc., Deep River, Conn.

Garrard—Catalog No. 41 covering phono motors, pickups, record players and automatic record changers. *Featured*—Separate display card on the new Model RC-100 "Turn-Over" Record Changer. Garrard Sales Corp., 296 Broadway, New York, N. Y.

General Cement—Catalog No. 142, of 36 pages, covering the line of radio solvents and cements, cleaners, compounds, finishes, repair kits, dial cables, etc. Includes dial belt guide. General Cement Mfg. Co., Rockford, Ill.

General—Catalog of "General" Dry Batteries for every use. Also battery replacement guide. General Dry Batteries, Inc., Cleveland, Ohio.

General Industries—New catalog of recording units, motors, and record changers. *Featured*—Model R90 Dual Speed Home Recording and Phonograph Assemblies. The General Industries Co., Elyria, Ohio.

General Transformer—Catalog sheet on the GTC Porta-Power Units for converting battery sets to high-line operation. *Featured*—bulletin on the Model C unit which supplies A and B power from 6 volts d.c. General Transformer Corp., 1252 W. Van Buren St., Chicago, Ill.

Haldorson—1941 Transformer Catalog and Replacement Guide. *Featured*—Line to Multi-Speaker Transformer. The Haldorson Co., 4500 Ravenswood Ave., Chicago, Ill.

Hallcrafters—New 20-page Catalog of Communications Equipment. *Featured*—The 1941 Super Skyrider SX-28. The Hallcrafters, Inc., 2611 Indiana Ave., Chicago, Ill.

(Continued on page 17)

The RADIOFRONT

KARL A. KOPETZKY

A VERY bad case of the National Jitters is becoming the lot of almost every manufacturer in the radio industry. Washington has become more and more deaf to the pleas for the release of all metals, and so manufacturers find it almost impossible to get any of the precious stuff without an "A", or priority, rating. When speaker manufacturers urged that with the virtual stoppage of all aluminum and nickel, there was no way to make permanent magnets, they were coldly informed that, "you used electro-dynamic speakers before you thought of permanent magnets. Well, go make electro-dynamic speakers again!" The fact that the e-d type of speaker is wholly useless in farm or battery sets made little or no difference to the powers that be.

The Government is gradually shifting its defense management from the "business as usual" viewpoint. This spells radical and serious changes in the radio manufacturing field as it now is constituted.

Take aluminum, for instance. Just for the record, Germany produced 2½ times as much aluminum as we estimated here we would need for airplane production alone. Aluminum estimates have been drastically revised from a requirement of 17,000,000 pounds per month (estimated in January, 1941) to over 100,000,000 pounds per month. From this it can be seen that aluminum is going to be very, very tight.

Nor is that all. Variable condenser men were told to use steel (already scarce), with perhaps some aluminum released for end plates. The electrolytic condenser people were advised to go back to cardboard cases for their product; chassis men are to use plastic (although one important ingredient of this substitute is on the "priority" list). Some aluminum is to be released for the manufacture of electrolytic condensers, since there is no "ersatz"; but all in all the metals situation is getting worse every day. In fact it is so bad that the most patriotic of manufacturers is beginning to howl. All attempts to reason with the OPM that the industry might eventually be strangled, and that the earning power of its employees numbering usually about 250,000 would be sharply curtailed, and the ability of this group to pay taxes or to buy defense bonds might be greatly reduced, even eliminated, have fallen on deaf ears.

The roar is getting louder, and one can freely predict that the Government will have to do something to correct the situation very soon.

Receiver Price Inflation

Due to the increase in labor costs, what with unions pushing up the base rates of pay, and the natural scarcity of trained factory help anyway, plus the ever-increasing difficulties in getting metals, plus when they can be gotten, and the increased price, the cost of manufacturing receivers is on the up-grade. Naturally, the increased costs of the manufacturer is passed on to the jobber and by the latter on to the consumer. This is causing a mild inflation in the prices of finished



RSD's NEWS ANALYST

Karl A. Kopetzky, formerly Managing Editor of "Radio News" magazine, who recently joined the executive staff of Oxford-Tartak Radio Corporation as co-ordinator of the company's expanding activities to provide for national defense requirements.

radio receivers; one source estimating that the lowest range for midgets will be \$12.95 instead of \$9.95 for the year 1942. The New Dealers are not opposed to mild increases of prices, but Leon Henderson, after trying to obtain voluntary price control, has just about given up the sponge and will request Congress to pass a bill making price control voluntary. Congress right now is in no mood to tackle the problem, and if it ever does, the prices of radio receivers will have jelled at the new higher prices before the bill is passed.

RMA-OPM Meetings

Meetings are taking place almost weekly between the Radio Manufacturers Association and the OPM in an all-out effort on the part of the RMA to straighten out the difficulties regarding metals. Some of the manufacturers have directed the RMA to state that if there is no let-up in the ever-increasing tightening of metals, urgently needed in the radio industry, that they will "shut down their plants." And they mean it!

Efforts of the RFC to induce radio manufacturers to expand by lending them capital at the ratio of 9 for 1, is meeting with poor results. Reason: If there is a loss, the borrower takes it, not the RFC.

Best Bet: The Government will let up on some of the metals so as to prevent wholesale shut-downs; but it will be a long drawn-out, hard-fought battle.

Too Much Paper Work

Another gripe of the manufacturers engaged in subcontracting national defense orders is the staggering amount of paper work the Government demands be done every week. Uncle Sam wants to know all about his orders; but more to the point, wants to be in a position to take over any plant should there be strikes, mismanagement, etc. The paper work keeps the Old Gentleman up-to-date on what's going on. But you can lay it on the line that many concessions are going to be made to industry, and thus let it get under full steam in the all-out effort to aid Britain.

1941 Outlook

It is reliably reported that the dollar value of sales for the year 1941 will, at the end of the present six-month period, equal the entire year's sales of 1940. This will give some idea what the radio industry has been doing, and the most part of the terrific increase is entirely due to national defense.

Servicemen to Make Money

The serviceman stands to make more money these next few years than he ever has since the advent of radio. Not only will higher prices somewhat discourage the buying of new receivers, but there will be a definite curtailment of the 1942 line. (Incidentally, there is talk along the corridors of Washington that automobile production for 1942 will be cut to 25% of the figure of 1940!). The manufacturers are making a special effort to get jobbers, and hence servicemen, fully stocked with adequate replacement parts for all types of repairs. Some firms have already cut off the receiver manufacturers from supplies, but are keeping up deliveries to the service trade. This means that servicemen will be able to do the repair work. This is OK with Uncle Sam, who wants the public's radios kept in good repair, and is very interested in keeping the serviceman going. The serviceman is the bulwark, should there be a sudden need for repair men in any national emergency.

Ham Dodos

Those hams who are disregarding and violating Government orders against contacting foreign stations continue to be a thorn in the side of the great patriotic majority who comprise the handom of these United States. The number of the guilty ones is still increasing at an alarming rate, and some form of drastic action directed at the whole fraternity can be expected sooner or later. Most recent black eye to the organized hams was the revelation that the amateurs of Peoria knew that Johnson (recently caught illegally transmitting spurious code messages in which he claimed to be a Nazi agent) was on the air. Yet they made no move to report him, nor any move to find his exact location though they have the technical training to have done so. One of the Peoria hams said, "It got so

(Continued on page 16)

Shop Notes

EMERSON EC & EC1 CHASSIS

Wiring Change

Chassis bearing serial numbers above 4,264,617 have the diode plate (No. 5 pin) on the 12SQ7 tube returning to ground instead of the avc circuit.

When replacing the pm speaker on Model EC-376 the color coding must be observed to insure proper phasing of the two speakers.



RCA DUAL-SPEAKER SETS

Speaker Phasing

On sets with two speakers it is essential that the speaker cones move in and out together. If one cone moves in while the other moves out, the tone will be impaired.

It is necessary to check phasing whenever a new speaker, cone, field coil, or output transformer is installed, or whenever the speaker connections are altered in any way.

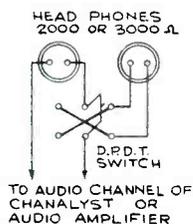
There are two general types of dual-speaker sets:

1) *Two speakers with voice-coils connected in parallel.* This type is the easiest to phase. Connect a 1.5-volt dry-cell across the secondary of the output transformer and observe, by sight or feel, whether the cones both move in the same direction. If one cone moves in while the other moves out, reverse the external connections to one of the voice coils.

If one speaker is a p-m and the other is an e-m, (electro-magnet) it is preferable to reverse the connections to the p-m speaker to avoid upsetting the hum-bucking action of the e-m speaker.

If both speakers are e-m, but of different size, reverse the voice-coil connections to the smaller one as this will generally have the least effect on hum.

If one or both of the speakers are e-m it is necessary to have the set in operation (volume control at minimum) to provide field excitation.



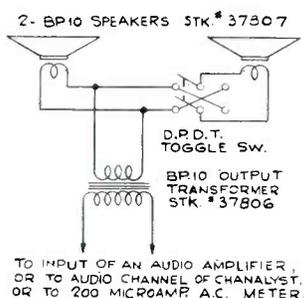
2) *Two speakers with separate output transformers.* In this type of dual-speaker set, it is not possible to use the simple battery check for phasing because the voice coils are not connected in parallel.

The recommended method of phasing in this case is as follows:

Connect a pair of 2000- or 3000-ohm headphones and a dpdt toggle switch as shown in the accompanying diagram. Connect the two leads to an audio amplifier that has some form of output meter indicator. The audio channel in a signal tracer is ideal for this purpose.

Hold both phones close in front of one speaker. Feed a 400-cycle modulated signal into the receiver and advance the receiver volume control to obtain a reading on the meter. Throw the toggle switch to each position and note the position that gives the greatest output on the meter. Mark this position "in phase". Mark the other position of the toggle switch "out of phase".

Place one headphone close in front of each of the two speakers, with the 400-cycle signal still fed into the receiver, and with the volume control advanced. Move the toggle switch to each position and leave it at the position that gives the greatest output on the meter. Note the switch marking for this position. If it is "in phase", the speakers are correctly phased. If it is the "out of phase" position, the speakers are out of phase and the external connections to the voice coil of one speaker should be reversed. The



choice of which speaker to reverse is the same as outlined above.

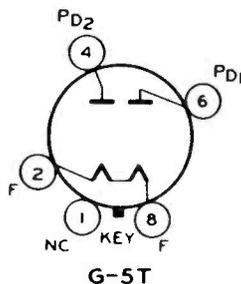
Instead of headphones, it is possible to use two small p-m speakers, a dpdt toggle switch, and an output transformer, connected as shown in the accompanying diagram.

A "phase checker" of this type will prove helpful in the shop.



RCA 5Y3-GT/5Y3-G TUBE

The 5Y3-GT/5Y3-G is a new full-wave, high-vacuum rectifier tube having the same electrical characteristics as the 5Y3-G which it supersedes. The 5Y3-GT/

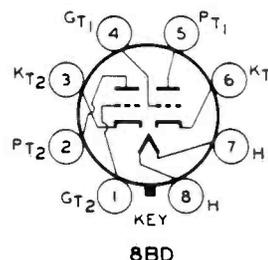


5Y3-G employs GT-construction with T-9 bulb and octal 5-pin base, and is directly usable in sockets intended for the 5Y3-G.

Bottom view of socket connections are shown in the accompanying drawing.

RCA 12SL7-GT TUBE

The 12SL7-GT is a new twin-triode amplifier of the high-mu, single-ended type



with separate cathode terminals for each triode unit. It is recommended for use in resistance-coupled circuits as a voltage amplifier or phase inverter. The separate cathode terminals offer greater design flexibility in the matter of biasing, inverse feedback, etc.

Bottom view of socket connections are shown in the accompanying drawing.



RCA 28T, 29K, 29K2, 211K

Antenna Condenser Adjustment

For best reception on "C" band with an outside antenna, adjust the antenna condenser for peak output on a station in the 31-meter band.

In Model 28T the condenser is C2; in the 29K and 29K2 it is C3; and in the 211K the condenser is C7.



SILVERTONE MODELS 3011, 3111, 3211

Mechanical & Electrical Changes

Soon after the start of the first production of these models, certain minor mechanical and electrical changes were made to make these receivers more uniform in their characteristics.

The open-end coupling turns used to couple the oscillator tank to the 12SA7-GT tube were dropped in favor of a .00005-mfd mica condenser, marked C12 in the diagram. The plate bypass on the 12SQ7-GT tube was reduced from .0005 mfd to .00025 mfd and redesignated C11 in the diagram. This was done to make the tone somewhat more brilliant and increase the apparent power output.

The mechanical changes consisted in reversing the positions of the two i-f coils, practically all production having the i-f Output in the shield can with the i-f Input unshielded. The i-f Input was also moved to mount on the front chassis flange instead of on the top of the chassis base.



SILVERTONE MODELS 3611, 3711, 3811

Production Changes

The identical mechanical and electrical changes made during the first production run of Models 3011, 3111 and 3211 have also been made in the above models.

ANALYSIS OF RADIO INTERFERENCE PHENOMENA
Character, Cause, Type Receivers Affected, Where Prevalent, and Service Remedies

Type of Interference	Character of Interference	Cause	Type Receivers Affected	Where Prevalent	Suggested Service Remedies
IMAGE RESPONSE	Heterodyne whistle or second signal when tuned to certain stations	Strong signal at a frequency 2x I-F above desired station.	Superhet only. (1) With limited number tuned circuits ahead first detector. (2) With low impedance, high frequency resonant antenna primary circuits.	Locality strong BC stations near high end of band. Vicinity 1610-1750 Kc. Police Stations. Vicinity 1700-2000 Kc. amateur band.	(1) Wave trap tuned to interfering station. (2) Band elimination antenna such as RCA Magic Wave. (3) Re-align I-F.
HARMONIC OF I-F	Heterodyne whistle when tuning a station having same frequency as a harmonic of the I-F.	Second harmonic of station combines with oscillator fundamental forming a spurious I-F.	Superhet only. Selectivity does not affect.	Vicinity of station operating at twice I-F.	(1) Wave trap tuned to station. (2) Wave trap tuned to station second harmonic in mixer grid circuit. (3) Re-align I-F.
DIRECT I-F RESPONSE	Non-tunable code with intensity increasing toward low frequency end of band.	Commercial shore-to-ship code signal having frequency in I-F range, reaching input to I-F system.	Superhet only. (1) With limited selectivity ahead of I-F input and relatively high I-F gain. (2) With high impedance, low frequency antenna system.	Coastal areas near location of commercial stations.	(1) RCA Magic Wave antenna. (2) I-F wave trap. (3) Re-align I-F. (4) Orient loop for minimum.
HARMONICS OF OSCILLATOR	Reception of short wave code or broadcast signals at points in standard broadcast band.	Oscillator harmonics combine with short wave signals producing the required I-F. Especially prevalent on loop receivers due to secondary resonances of loop.	Superhet only. (1) With loop antenna. (2) Having oscillator rich in harmonics.	Rurally or where SW signals of proper frequency are intense.	(1) Use wave trap on interfering station. (2) Orientation of loop. (3) Re-align loop circuit. (4) Reduce oscillator excitation.
COMBINATION OF I-F	Whistle or second station(s) heard on practically all carriers.	Difference in frequency of two strong stations equal to I-F of receiver; the two stations mixing within receiver to form a constant spurious I-F.	Superhet only; having limited selectivity ahead of first detector.	Metropolitan areas, generally.	(1) Check by tracking of RF and antenna circuits. (2) Reduce size or effectiveness of antenna. (3) Install wave trap and tune to frequency of one of interfering stations. (4) Shift I-F.
HETERODYNE OSCILLATOR RADIATION	Whistle on a particular desired station, disappearing or changing frequency at random.	Radiation of receiver's heterodyne oscillator, due to oscillator strength, unusual coupling, resonant antenna, or transmission via power line.	Superhet only. (1) Without good shielding. (2) Without R-F stage.	Metropolitan areas, generally.	(1) Filter power line. (2) Use RCA Magic Wave antenna. (3) Reduce oscillator grid leak. (4) Shift I-F.
CROSS MODULATION WITHIN RECEIVER	Second station(s) appearing in background when tuned to desired station.	Strong interfering station modulating carrier of desired station within a nonlinear circuit or element of the receiver; or pickup and detection taking place in audio system.	TRF and Superhet. (1) With limited or no selection ahead of first tube. (2) With exposed grid circuits and wiring associated with early tuned stages. (3) Without variable-mu input tubes.	Metropolitan areas. Vicinity of very strong stations.	(1) Wave trap in antenna tuned to station causing trouble. (2) Filter power line. (3) Install RCA Magic Wave noise reducing antenna. (4) Shield exposed grid leads and wiring of first stages.
CROSS MODULATION EXTERNAL TO RECEIVER	Second station(s) in background on or between other stations.	Detection within, and re-radiation from as power lines, telephone lines, and other aerial metallic structures.	All types of receivers are affected regardless of selectivity or design.	Vicinity of unusually strong stations, especially where open-wire power lines are prevalent. Generally changes with weather.	(1) See that power line and telephone grounds are secure. (2) Ground conduits solidly. (3) Use RCA Magic Wave antenna. (4) Orient loop antenna for minimum interference.
SAME CHANNEL BEAT	Flutter, waver, or growl heard in background when tuned to desired station.	Second station assigned to same channel, but differing very slightly in carrier frequency.	Receivers with high sensitivity and extended bass response.	In areas remote from a usable assortment of strong stations. Wherever signals of two stations on same channel are comparable in strength.	(1) Use directive or loop antenna. (2) Reduce sensitivity of set. (3) Reduce bass response.
ADJACENT CHANNEL BEAT	Steady 10,000 cycle note or whistle.	Adjacent channel carrier beating with carrier to which receiver is tuned.	TRF and Superhet; especially those with limited selectivity and wide range of audio response.	Localities where adjacent channel station is strong compared to desired station.	(1) Suppress adjacent station with sharply tuned wave trap. (2) Re-align receiver carefully. (3) Reduce high-frequency response. (4) Use directive antenna.
MONKEY CHATTER	Unintelligible modulation superimposed upon desired station, having character of "inverted speech"	Side band of adjacent channel overlapping side band and combining with carrier of desired station. Also caused by harmonics from over-modulation of adjacent station.	TRF and Superhet; having wide band selectivity and audio response.	Localities where adjacent channel station is strong. Also aggravated by extended high frequency response of transmitter.	(1) Precisely re-align receiver to make more selective. (2) Reduce high frequency audio response.

Analysis of radio interference phenomena, in chart form, as compiled by engineers of RCA Manufacturing Co., Inc.

CIRCUIT COURT

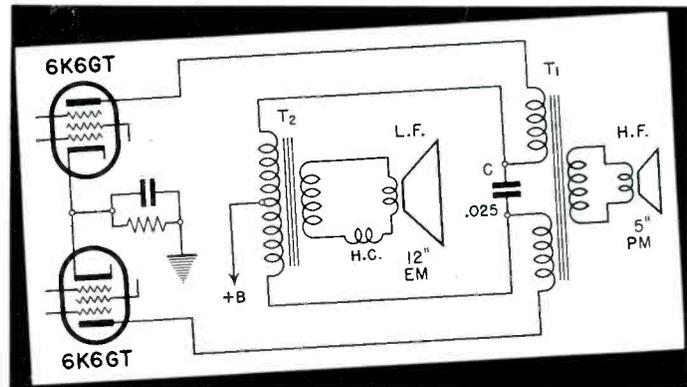
Compressor-Expander

COMPRESSOR-EXPANDER circuits are becoming quite common in special amplifiers designed for p-a and phono-graph applications. Since the volume range on commercial records is restricted, the use of an expander returns a portion of the original volume range to the reproduced sound. For microphone operation, volume compression (or audio avc) prevents overloading and compensates for changes in voice level at the mike.

The compressor-expander circuit employed in the *Silvertone* Model 8970 high-gain, 75-watt amplifier is shown in *Fig. 1*. The 6L7G is the controlled audio tube, the 6J7G the avc-ave amplifier, and the 6H6G the avc-ave rectifier. The signal grids of the 6L7G and 6J7G are common to the master gain control *R* insofar as audio voltages are concerned, but are otherwise isolated (by condenser *C*) so that separate bias voltages may be maintained. Since the control grid (No. 1) in a 6L7G is a variable-mu grid and will produce distortion on large signal inputs, the No. 3 grid is used as the signal grid. Grid No. 1 is employed as the principal variable-gain member; it is at a-f ground potential by virtue of condenser *C1*.

The amplified audio signal from the 6J7G is applied to the 6H6G which is connected as a voltage doubler. The rectified d-c output appears across the

Fig. 2. Dual-speaker frequency-dividing network used in some of the new RCA "Floodlight Tone" receivers.



2-meg potentiometer *R7*. The resultant voltage is applied in series with the control bias of the 6L7G tube.

When the dpt switch is thrown to the *ave* or expansion position the voltage becomes opposite in polarity to the bias of the 6L7G tube. This reduces the effective bias and increases the gain of the tube. When the switch is thrown to the *avc* or compression position the tube bias and avc bias are additive. Hence, the negative bias is increased and the gain of the tube decreased. Since the voltage developed across the potentiometer *R7* varies with signal level, the control of the gain of the 6L7G in either direction (*avc* or *ave*) will be in accordance with the same factor. The degree of compression or expansion for any given signal level is controlled by the potentiometer *R7*.

The delay time, or the rapidity with

which the automatic control operation functions, is set to 1/15th second in the *Silvertone* amplifier. The tube bias and delay-time is adjusted by means of the semi-variable resistor *R6* which determines the no-signal bias on grid No. 1 and the delay bias on the 6H6G.

"Floodlight Tone"

A NUMBER OF the new 1942 *RCA Victor* receiver models incorporate "Floodlight Tone"—a dual speaker system for the separate reproduction of bass and treble. Models 29K2 and 211K each employ a 12-inch electrodynamic low-frequency speaker and a 5-inch permanent-magnet high-frequency speaker.

In such systems it is customary to use some form of frequency-dividing network, diverting the lower band of frequencies to the larger of the two speakers, and the frequencies above this band to the smaller speaker. Aside from the obvious advantage of feeding two bands of frequencies to separate speakers, where each speaker has been designed for the most efficient reproduction of the one band it receives, the diversion of the other band, in each case, prevents overloading of the individual speakers and hence appreciably reduces distortion and frequency masking.

The frequency-dividing system employed in the *RCA Model 29K2* is shown in *Fig. 2*. The output transformer *T1*, with split primary, feeds the high-frequency speaker; the output transformer *T2* feeds the low-frequency speaker.

(Continued on opposite page)

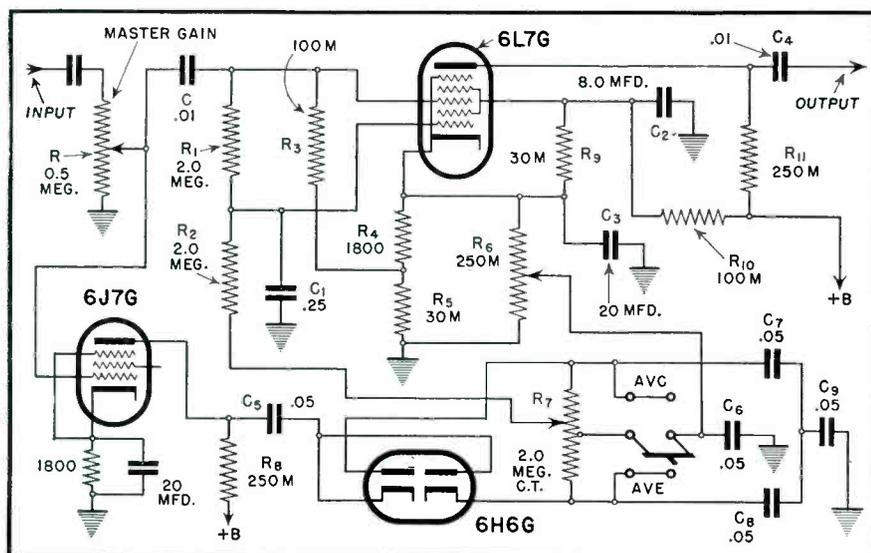


Fig. 1. Compressor-expander circuit used in the Silvertone Model 8970 amplifier.

(Continued from opposite page)

The separate primaries of transformer *T1* are series-connected in the plate circuits of the 6K6GT tubes, and the inner terminals joined by the condenser *C* which, at the same time, shunts the primary of transformer *T2*.

There is formed here a series-resonant circuit composed of the split primaries of *T1* and the condenser *C* which favors the higher frequencies, and a shunt-resonant circuit composed of the primary of *T2* and condenser *C* which favors the lower frequencies. Condenser *C*, having a high reactance to low frequencies (approximately 60,000 ohms at 100 cycles), diverts the bass frequencies through the primary of *T2*. Having a comparatively low reactance to high frequencies (approximately 3000 ohms at 2000 cycles), condenser *C* bypasses the treble frequencies around the primary of *T2*.

SHOW IN REVIEW

(Continued from page 7)

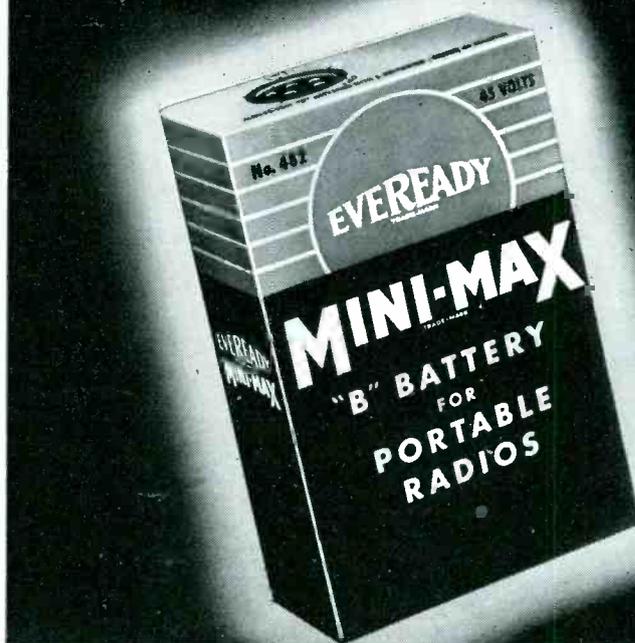
general program on substitutions and conservation of critical defense materials, the RMA has anticipated requests, which have since developed, for reduction in the models, types and sizes of receivers and components. Such reductions have already been initiated and a new "Material Bureau" has been established by the RMA Engineering Department. Its function will be to find substitutes for, and also more efficient use of, materials under priority regulations. The Material Bureau, with the cooperation of industry engineers, proposes to approach the problem of material utilization not only through substitutes of materials but also from the viewpoint of mechanical design, circuit design and standardization, such as that of various component parts, etc. This activity represents a broadening in the viewpoint of the industry, and should produce important results.

TELEVISION

Though unable to attend the Chicago meeting, Chairman James L. Fly of the Federal Communications Commission in a message to the RMA convention, said in part:

"I feel that the Radio Manufacturers Association is to be highly complimented for its joint sponsorship, with the Federal Communications Commission, of the national television standards committee. I hold very high hopes for television, not in some distant future, but immediately. I feel that when television commences on a full commercial basis on July 1, it should immediately be in a position to move right ahead and become a very

Here's why this "B" battery for portables **OUTSELLS** **ALL OTHERS COMBINED!**



1. "Eveready" "Mini-Max" Radio "B" Battery No. 482 fits more than 90% of the 2,000,000 portable sets now in use!
2. It lasts approximately twice as long (size for size) as batteries of ordinary round-cell design!
3. It costs no more than ordinary batteries for portable sets!

GET YOUR SHARE OF THIS BUSINESS NOW!

FREE! Replacement Guide for portable receivers!
Tells the proper batteries for portable sets.
Accurate! Up to the minute! Write Dept. D-2,
National Carbon Company, Inc., Box 635, New York, N. Y.

Here's the battery for "personal" or "camera-type" radios!



"Eveready" "Mini-Max" Radio "B" Battery No. 467 is the battery around which "personal" or "camera-type" portables were designed. 67½ volts in a space 3⅜" x 2¼" x 1⅞". More and more customers will ask for it.

"EVEREADY"
"MINI-MAX"
RADIO "B" BATTERIES
NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation



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

NEW PRODUCTS

OF THE MONTH

HALLICRAFTERS

Centralized Sound—Model RSC-2, equipped with an fm/am tuner, high-fidelity amplifier and monitor speaker, inclosed in a single rack of the table-mounting type. Designed particularly for centralized radio and sound systems.



Amplifier is flat within plus or minus 1.5 db from 30 to 20,000 cycles, has mike and phono inputs, and separate bass and treble equalization controls.

Response of f-m tuner varies less than 1 db from 30 to about 7,000 cycles, is down only 1.8 db at 10,000 and 4 db at 15,000. By The Hallicrafters, Inc., 2611 Indiana Ave., Chicago, Ill.

RCA

Sound System—An all-purpose sound system in one compact unit, including amplifier, controls and record player. Operates from 105-125 volts, 60-cycle line, or from 6-volt storage battery. Delivers 15 watts output. Turntable mounted atop the amplifier case in conjunction with crystal pickup. Measures 16½" long, 12" deep, and 12" high. Equipped with carrying handles. By RCA Manufacturing Co., Inc., Camden, N. J.

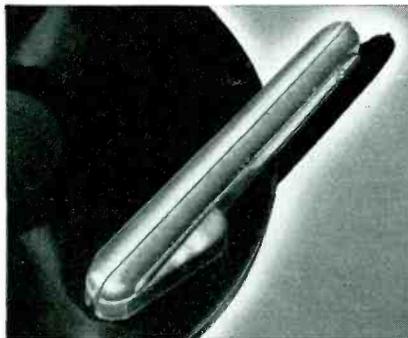


SHURE

Crystal Pickup—Model 97AN "Hi-Lo" Crystal Pickup, with permanent sapphire point needle, is of the high-voltage, low-pressure type, the ratio of output voltage to needle point impedance being 1.4 volts output at 1,000 cycles (Audiotone record) at 1 ounce needle pressure. This permits replacement of conventional pickups without alterations in amplifier.

New type cartridge bearing seats provide "pinch" compensation, permitting easy up and down motion of moving system to overcome the "pinch" effect and follow record grooves correctly. Offset head corrects tracking error. Set screw permits changing of needle without replacing entire cartridge.

Also available is Model 97A, the same as Model 97AN but less needle. By Shure Brothers, 225 W. Huron St., Chicago, Ill.



TURNER

Dynamic Mike—Model 211, salt-shaker type, with new magnet structure and acoustic network providing extended



range, with lows raised 2 to 4 db. Total range, 30 to 10,000 cycles.

Tilting head, balanced line output connection and 25 feet of cable. Finished in satin chrome.

Model 211 has a level of -56 db below 1 volt per bar for high-impedance units. Low-impedance models also available. By The Turner Co., Cedar Rapids, Iowa.

PRECISION

Circuit Tester—Series 834, a 31-range ac-dc compact circuit tester requiring no external multipliers or batteries. There are 6 ac or dc output voltage ranges of



12/60/300/600/1200/6000, and 4 current ranges of 1.2/12/60/600 mils. Resistance ranges are 0-5000/500M/5 Megs. Also 6 db ranges from -10 to +70. All measurements from only two pin jacks except 1200 and 6000 volts. New type large 400-microampere rectangular meter. Overall size is 7" x 4½" x 3". By Precision Apparatus Co., 647 Kent Ave., Brooklyn, N. Y.

SPRAGUE

Smaller Electrolytics—The Sprague 8-mfd condensers, previously housed in an aluminum can 1⅜" in diameter have been reduced to a diameter of 1"—an aluminum saving of better than 35%—without a sacrifice in specifications or functional characteristics. By Sprague Products Co., North Adams, Mass.

PRESTO

Glass-Base Discs—A new, high quality recording blank using a plate-glass base, and said to have better characteristics than the previous aluminum base discs.

The new disc is .104" in thickness, making it as durable as the ordinary commercial phonograph record. Has two center holes, one for the turntable shaft and one for the cutting mechanism drive pin. Each hole is bushed with a soft brass eyelet to insure a snug fit and prevent chipping of glass.

Made in 12" and 16" sizes only, and carry the same net prices as the aluminum-base discs.

Also steel-base discs for school and home, in 7", 8", 10" and 12" sizes. By Presto Recording Corp., 242 W. 55th St., New York, N. Y.

(Continued on page 24)

significant force in our American life. . . .”

President Knowlson also commented on the Association's successful efforts toward commercial television service, stating—with a closer eye to realities, we think—that “while this does not mean a great deal immediately, it puts television development in a position to go ahead with the confidence that when we return to times of peace this field will be open, and television is going to be a service that outrivals radio.”

WANTED—SPECIFICATIONS

(Continued from page 5)

accuracy holds over the entire band; the change in frequency with line voltage; the change in frequency with temperature; the change in distortion of the output signal for various percentages of modulation; the change in output signal for various values of line voltage, etc.

One of the most significant kinds of information which is needed in specifications of signal sources is the accuracy of the output voltage control calibration. Unless this is stated, the utility of the signal source for sensitivity checking is useless, for its accuracy of calibration may just as read-

ily be 50 percent or even 100 percent as 10 percent. Thus, over the broadcast band the degree of accuracy becomes less and less as the frequency of the signal output is increased. This is one of those specifications which is omitted, for reference to 25 and 50 percent accuracy is not very flattering after speaking about .5 or 1.0 percent accuracy in frequency calibration. Yet it cannot be helped, for attenuator design to provide reasonably good accuracy of calibration over a wide frequency range is very expensive, and is entirely out of line with what one would expect, considering the cost of the remainder of the unit.

But enough of oscillators—a full discussion would require ten complete issues of this magazine—so let's talk about something else. . . .

VACUUM-TUBE VOLTMETERS

For example, vacuum-tube voltmeters; they're becoming very popular and are destined to be even more so in the future.

In devices such as these, specifications are very important as a means of comparison, particularly when the device embraces r-f and a-f voltages in addition to d-c voltages and d-c resistance, and maybe current also.

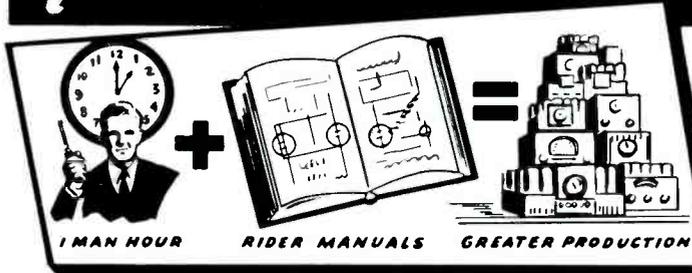
When speaking about voltmeters, people are accustomed to such figures of accuracy as 0.1 percent, 0.5 and 2 percent. In vacuum-tube voltmeters, the accuracy ratings are lower and servicemen who use these devices might just as well accustom themselves to that fact, so as to permit manufacturers to quote such figures as 3.0, 5.0 and even 10 percent, depending upon the frequency.

Such items as the frequency characteristics of voltage dividers, the change in input resistance with frequency for a-c measurement, the change in input resistance for various ranges of d-c measurement, minimum current consumption, number of divisions upon the scale, change in accuracy rating with line voltage, effect of tube changes, etc., are the items servicemen should comprehend and the kind that they need in order to be able to compare equipment produced by different manufacturers.

MORE LIGHT NEEDED

It is possible to carry on this way *ad infinitum* and fill page after page, for we have by no means given all of the details concerning even test oscillators and vacuum-tube voltmeters, let alone all of the other kinds of equip-

RIDER MANUALS GIVE YOU *Greater Production per Man Hour!*



The scarcity of good servicemen today makes a production problem for you that can only be solved with more efficient operation by everyone working at your bench.

Curtailed set manufacturing will create still more work for your already overloaded shop.

The many old as well as new sets servicemen are getting in for service make it necessary to have a complete file of servicing data—if you are going to turn out the work fast enough to cash-in on the great volume of business that is available.

The only source of complete information is Rider Manuals (now in twelve volumes). Here you will find not just “wiring diagrams”—not just a few of the new sets—but complete servicing data on sets issued from 1920 to 1941 inclusive.

Compare Rider Manuals from the standpoint of easy use, readability, and completeness in set coverage and facts. Only here will you find everything, all in one place—authorized informa-

tion on i-f peaks, operating voltages, alignment frequencies, parts values, voltage ratings of condensers, wattage ratings of resistors, coil resistance data, dial cable adjustments, etc., etc. Vol. XII contains “Clarified Schematics” bound right in the volume. This section breaks down over 200 models whose original schematics were so involved that they would have taken you hours to decipher them. “Clarified Schematics” shows you, at a glance, which coils, condensers, resistors and switch contacts are used in the r-f, mixer and oscillator sections for each setting of the wave band switch.

Only Rider Manuals give you everything you need to eliminate guesswork and reduce your trouble-shooting time to a minimum. Be sure you have all twelve volumes.

Volumes XII to VII—\$10.00 each

Volumes VI to I— 7.50 each

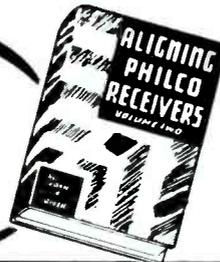
ALIGNING PHILCOS

Vol. II - Just Out

Over 200 Pages

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Covers Philco sets from 1937 to 1941, inclusive. Includes remote control and the latest loop sets. Order it today!



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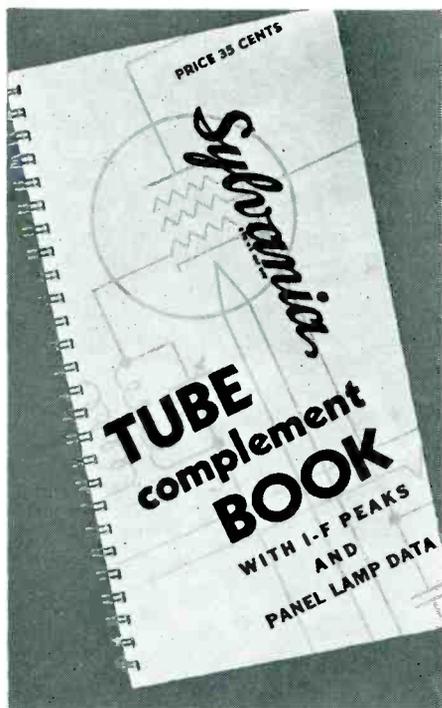
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DID YOU KNOW

... That there are 586 Receiver trade names in the Sylvania Tube Complement Book?

... That there are 16,730 Radio Models?

... That there are 100,380 tubes or sockets involved?



... That the 1941 Edition Sylvania Tube Complement Book Contains

The First Collection of Panel Lamp Numbers Ever Compiled?

WHERE can you find all this information? In the handy, sturdy Sylvania Tube Complement book... the serviceman's standby.

Wire-O bound, the Sylvania Tube Complement book holds 272 pages... opens flat, without danger of its falling apart or any of the pages tearing out.

This compilation is the only one of its kind in the industry. It is indispensable to the man who wants to build a sound, steady business on a foundation of satisfied customers. Whether the job calls for knowledge of a 1924 antique or the latest 1941 model you're never in the dark if you have the Sylvania Tube Complement book in your kit.

Write for this book today—enclosing 35c in stamps or coins. And ask, too, for a full list of Sylvania's 125 silent salesmen. Many of these tested selling aids are free... others are very fairly priced. And each one of them will help you do a better job, get more trade, make more money.

Sylvania Radio Tube Division

HYGRADE SYLVANIA CORPORATION

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500 Fifth Ave., New York, Salem, Mass.,
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Also makers of Hygrade Lamp Bulbs, Hygrade
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Fluorescent Light Fixtures

ment which are used in the service shop. But, from some of the items we have mentioned, servicemen can gather an idea of what we have in mind and it may bring to light some details which, while a part of radio theory, have not been encountered in normal radio receiver servicing operations, and therefore represent further information which must be absorbed by the servicing industry, if proper conditions relative to judicious buying are to prevail.

This information, as it relates to all of the equipment used in the service shop as a regular means of testing, is valuable because by it and through it maximum utility can be attained from everything in the shop. While we do not agree with the oft-repeated statement that some technical specifications of test equipment can be left out because they are not assimilated by the servicing industry, we do agree that the servicing industry must take whatever steps are necessary so as to place itself in that position where it can accept all specifications and know just what they mean. And in that connection, it is within the province of every radio magazine catering to the servicing industry to publish such material as will be of aid to the serviceman in understanding the technical specifications which accompany test equipment and which never are encountered in normal servicing work.

Accomplishing this aim is not the work of a day and it is probable that some mistakes will be made during the process of interpretation; but in the final analysis, everyone—the test equipment manufacturer as well as the serviceman—will benefit.

In the meantime, let there be no curtailment of specifications. If the manufacturer will do his share in furnishing the data, the serviceman will do his share in learning how to use that information and cease buying with his fingers crossed.

SERVICEMAN'S DIARY

(Continued from page 6)

"That's not enough," she shouted. "I must get a large number to shelters—and quickly!"

"Tell me how many you need to save to hold your job and I'll do the rest," I promised. "I know a lot of fellows who'll get over here in no time at all if I tell them you're here. What's bogey on this sheltering business anyhow?"

But she had already rushed out of the room. I caught up with her as she was running up the stairs. Jerry was standing at the top, grinning.

"What's the wild rush?" he asked.

"The air raid warning!" she gasped.

"That's all right, miss, don't get excited. They just sent it out over the radio to let people know how it sounds so if there's a real air raid, they'll recognize the signal."

"Oh," she sighed, "I'm so glad. I just got this job day before yesterday and I don't know all the ropes yet."

I walked her to the door. "Remember," I told her, "all you've got to do is to let me know how many people you need to bring to this shelter and I'll do the rest."

"That's nice of you," she replied. "But if you make sure that just one person gets there, I'll be satisfied."

I'm still wondering what she meant by that.

THE RADIOFRONT

(Continued from page 9)

bad, that we were afraid to mention the guy over the air or at club meetings, for fear that he would hear us and laugh at us!"

Uncle Sam is becoming more and more convinced that hams make the finest material for emergency operators, that they can be relied on for flood work, and that they will fill gaps in the operating ranks of the military, but that they are totally unable to police their own groups, or even to keep their respective noses clean. And Uncle Sam is getting riled enough to do something about that!

Britain's Appeal For Radiomen

The recent appeal for radiomen to go to England to man the airplane locators is not meeting with the response which was expected. While the salary offered is quite good—in fact, higher than can be obtained here—British taxes cut that salary almost in half.

Best bet: England will revise her taxes* so that the American radioman will get better pay, net, than here; and will start a propaganda campaign to romanticize the jobs. Another angle being considered, is to permit women radiops to apply as well as men. Women are anxious to get into the war. In our own *Army Amateur Radio System*, women were found to be as good operators as men. Ditto the *NYA*.

Odds 'N' Ends

The Army will shortly ask the President to ask Congress to consider a bill which would permit the Army to requisition ham radio equipment under the same terms as the bill presently in the Senate permitting the Government to take over plants. It does not seem likely that the bill would pass, if asked for, because of the very personal angles involved. Congress is not yet ready "to put on the heat" on each individual for a sacrifice to aid Britain.

The latest *Field Day* sponsored by the *American Radio Relay League* showed conclusively that the average ham's home-built equipment for field use is not up to Army snuff, and blasts a hope that hams

* Latest from British Consulate General is, "Pay of members of the Civilian Technical Corps will not be liable to British Income Tax."—Ed.

could be induced to design and build unified transmitters and receivers in large quantities which could be used by the military. Units were found to be too cranky and tricky for any but the owner or builder to operate.

Some communication receiver manufacturers are 6 to 9 months behind in civilian orders, and expect the biggest civilian year that they have ever had.

A few mail order houses are holding off a bit with their fall catalogs pending further developments in the parts industry.

The Broadcasting Chains' listening posts are driving the Nazis nuts, what with their picking up broadcasts intended only for local consumption, and rebroadcasting them over a world-wide network, via short wave. Recently the Nazis mis-fired when the Japs, supposedly the German allies, got their information on the start of the Nazi-Red war, not from any ambassador or news service, but from American radio transmitters.

The *FBI* and the *FCC* are hitting pay dirt in running down the 5th Columnists in this country by means of radio. Much more so than they expected.

To assist in the anti-5th Column work, the *FBI* has sent out a call for radiops who can give and take 25 w.p.m. No Civil Service to bother with. Just apply to J. Edgar Hoover.

Jokey of the year. The *FCC*, one of whose very reasons for existence is that it *must* police the airwaves, refuses to accept or acknowledge the receipt or report of any spurious messages sent in *cw* and intercepted by ordinary, but patriotic civilians. The *FCC* claims that it is against the law for anyone to intercept any message if it is not addressed to him, broadcasts and ham stuff excepted. So it is. But howinhell could you report a murder to a cop if he would arrest you for peeking through a window, when your peeking through a window was how you saw the murder in the first place? Doesn't make any sense.

The Army is testing a new type of "talkie-walkie" these days. The present ones "ain't so good!"

The *FCC* investigation in the Senate has slowed down to a dribble—on account of much more important biz.

Look for new and important changes in radio sets which will make use of the substitutes.

Factories are looking for good testers, and getting lots of servicemen to apply.

Watch for hot radio developments in the airplane locator line. Uncle Sam has one which is much more sensitive than that of the British.

The "Latest Outpost of Civilization," Alaska, may become our first line of defense, if Hitler wins in Russia. Watch for broadcasts from and to that place.

The application for f.m. in the 28-30 mc band of the hams will be granted, if it has not already been by the time this reaches the reader. Not so the application for the low-code-test Class D ham license, which is still being blitzed by more important business.

It may come to pass that hams will have to join the *AARS* in order to stay on the air at all, some are saying. But the Army is mum on it!

SHOW LITERATURE

(Continued from page 8)

Hammarlund—The "41" catalog of variable condensers, i-f transformers, r-f chokes, trimmers and padders, transmitter
(Continued on page 20)

SNOOPER'S PARADISE!



Everything's hunky-dory for our hero, Homer G. Snoopshaw, B.R.S. (Battery Replacement Specialist), since he went to work in the Burgess Battery Company's own replacement laboratory. With his uncanny knowledge of radio batteries he can specify the necessary replacement at a glance — hasn't been stumped yet!

Of course, the fact that he keeps a "Burgess Replacement Guide to Portable Radios" in his pocket may have something to do with his brilliance. In fact, we know plenty of dealers who depend on the "Guide" for bigger, quicker replacement sales every single day! Included is the new "Quick Reference Price List"—covers the complete line at a glance!

Got your free copy yet? See your distributor, or write to Homer G. Snoopshaw, B.R.S., care of Burgess Battery Company, Freeport, Illinois.



Homer recommends

Burgess No. 4GA42 for several portables notably Philco 40-81, 40-82, and 40-PT-63. Another unit that makes Burgess "The Complete Replacement Line."

BURGESS BATTERY CO.
FREEPORT, ILLINOIS

BURGESS THE Complete REPLACEMENT LINE

QUALITY PAYS—OR WHY MR. VAN DROOL DROPPED HIS SPOON IN THE SOUP

It happened during the dinner hour at the Van Drool mansion.

Rich Mr. Van Drool was sipping soup in perfect rhythm to the music of his super de luxe radio console. Suddenly came a noise like a firecracker as a midget condenser—which serviceman Wilbert Fixit had installed just the day before—exploded.

Mr. Van Drool jumped, dropped his spoon and swore. What made him so mad, he said afterwards, was not that he dropped his spoon in the soup, but that he burned his fingers getting it out.

That experience taught Serviceman Fixit a lesson. No more midget dry electrolytics for him. He'd use big, full-sized replacements and play safe. One day, however, his jobber gave Wilbert a sample Sprague Atom and some literature about it.

"Guaranteed not to explode!" snorted Wilbert as he read the literature. "Phoooy!" But Wilbert was a methodical man. He put the Atom under test. No matter what he did, it wouldn't explode. Although the condenser was only rated at 450 Volts, he had to smack it with over 750 volts before it even broke down. Then Wilbert brought a dozen more Sprague Atoms and found they tested equally good.

While he was testing them, Mr. Van Drool's chauffeur dragged one of the upstairs radios into the shop.

"The boss wants this fixed in an hour," he explained. "And no foolin'." He says

it's your last chance to please him."

"Lordy," groaned Wilbert, after examining the set. "A three-section condenser gone bad. It'll take me a week to get one from the factory."

Then he thought of his Sprague Atoms and the ST mounting strap the jobber had supplied with them. He could take two 8 mfd. 350 V. Atoms and a 25 mfd. 25 V.

Atom, strap 'em together—and the job would be done. It was the only thing Wilbert could do, so Wilbert did it.

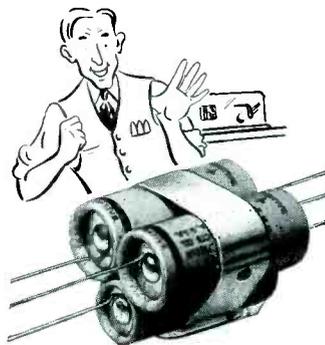
To his surprise the three Atoms when strapped together were actually smaller than the original three-section condenser. Also, his total net cost on the Atoms was only 96c, whereas a duplicate unit would have cost \$1.20.

What's more, the Atoms stayed put. Mr. Van Drool was more than pleased—and that meant Wilbert was pleased, too. Today he uses Atoms for practically all of his replacements, big or little.

"I save 'steen ways by using Atoms," is the way he puts it. "I save money, I save shoe leather, I save time, I save my good disposition—and I save customers. Best of all, Mr. Van Drool will never drop his spoon in the soup again."

Drooly yours,

SPRAGUE PRODUCTS CO.
NORTH ADAMS, MASS.



RSA NEWS



THE Fourth Annual Convention of RSA got off to a gala opening Thursday evening, June 12, with the first annual RSA Banquet and Get Together. Following the closing of the special preview of the Parts Trade Show for RSA members, we made our way to "The Village," somewhere in the wilds of the near north side of Chicago. There a Delicious (with a capital D) chicken dinner with all the fixin's was served. The chickens came from the establishment of a former radio manufacturer, Grunow, who, we understand, is making a really big business out of chickens (maybe that's what some of us ought to do!).

Introduced by *Lowery Easley*, President of the Chicago Chapter RSA, *Ken Vaughan*, RSA's newly elected National President welcomed the members to the RSA Convention and pledged himself to a year of accomplishment for RSA. Ken then introduced the newly elected National Officers and the National Directors of RSA.

Excellent entertainment followed, the old German waiter-singer being especially good. The "Get Together" broke up at all hours.

The Chicago Chapter RSA, under whose sponsorship the Banquet was held, is hereby requested by all RSA to make plans now for an even bigger Banquet next year.

One of the highlights of the RSA Convention technical sessions, held in the North Ball Room of the Stevens Hotel, Chicago, June 13, was the address by *Prof. D. E. Noble* of Motorola on "Frequency Modulation." Slides were used to portray diagrams, apparatus, charts, etc. We can never understand this still new development too well, and Prof. Noble's lecture was of great value to the RSA members in attendance.

Another outstanding feature was the practical demonstration and lecture by *Mr. William Boelke* of RCA, on the uses and applications of the RCA-Rider Chanalyst in conjunction with newly designed supplementary equipment. The well-known RCA Demonstrator Board was used to vividly illustrate the lecture.

No convention would be complete without the always thought-provoking and lively talks of *Mr. S. R. Cowan* of RADIO SERVICE-DEALER magazine. Sandy outlined the problems and opportunities facing radio servicemen under the Defense Program. He pointed out that the next year would not be a normal one for servicemen and that opportunities as never before were ahead.

New Executive Secretary

The RSA Board of Directors, in their recent meetings in Chicago, appointed *Donald H. Stover* as National Executive Secretary of RSA, succeeding *Joe Marty, Jr.*, who resigned to accept a position with a Chicago radio manufacturer.

Don has been identified with RSA since its inception. He was one of the organizing Directors and served as elected Director representing District 10 RSA from 1937 to 1940. He was elected National Secretary to the Board in 1938, filling that post for two years. Don was also editor of our RSA house organ, "The Radio



Kenneth A. Vaughan, RSA's new national President.

Serviceman," for several years. He is a member of the Freeport Chapter RSA in which he has served in the past as Chairman and Secretary-Treasurer. In radio servicing since 1922, Don has been a partner in the Radio Service Laboratory, Freeport, Illinois, for the past twelve years.

"A greater RSA" is the pledge of the new Executive Secretary.

National Officers Elected

Promoted to President: *Kenneth A. Vaughan*, 312 Market St., Johnstown, Pennsylvania. Director of RSA District 16, former National Vice-President of RSA, has served as president and secretary of the Johnstown Chapter RSA. Ken owns his own shop in Johnstown and has been engaged in radio servicing for eighteen years. Quiet but energetic, with his heart all RSA.

New Vice-President: *Edward H. Gordon*, LeClaire Hotel, Moline, Illinois. Director RSA District 5, and president of the Interstate Chapter RSA. Ed operates his own business, The Gordon Sound Service, and is a full-time sound serviceman with thirteen years' experience. Businesslike and dynamic best describes Ed.

Re-elected Secretary: *Calvin W. Stapp*, 512 N. Beard St., Danville, Illinois. Director RSA District 10, now serving his second term as National Secretary to the Board. He is a past secretary of the Danville Chapter RSA. Cal has been doing service work for fifteen years and is employed by the Allen Electric Company of Danville. Dependable and sincere fit Cal.

Treasurer again: *Harold W. Cunningham*, 1322 Wilmette Avenue, Wilmette, Illinois. Director RSA District 8, re-elected for a second term as the man who signs the checks. He has held the offices

of vice-president and chairman of the qualifications committee of the Chicago Chapter RSA. Harold has been eleven years in radio servicing and owns his own shop in Wilmette. Efficient and thorough, 100% RSA.

National Office Moved

RSA is on the move! We're going places! Both literally and figuratively.

The Board of Directors of RSA, at their annual meeting in Chicago recently, directed that the National Office of RSA be moved from 304 S. Dearborn St., Chicago, Illinois, where it has been for four years, to 1216 W. American St., Freeport, Illinois. The move was made in the interests of economy and greater efficiency. Freeport is near enough to Chicago to allow the National Office to readily keep in touch with the other radio associations, radio manufacturers, and radio trade papers with offices there, yet the move will make possible many economies of operation.

All correspondence should be addressed: Radio Servicemen of America, 1216 W. American St., Freeport, Illinois. Your letters to the National Office will receive prompt attention.

Dividend!

Good news RSA members!

Beginning with the July issue, you will receive RADIO SERVICE-DEALER magazine every month as a part of your membership. Two pages will be devoted to RSA News and the excellent technical articles and departments will help you in your service work. An extra value with your membership—and without an increase in dues, still just a dollar a year for everything.

'Nuff said. RSA's accomplishments speak for themselves.

RSA Cooperates with CTC

The National Office of RSA has been asked to cooperate with, and has offered its facilities to the *Civilian Technical Corps*.

Formation of the CTC was recently announced as a non-military body of paid volunteer craftsmen in certain skilled trades, open to United States citizens, which has been established by the British Government to maintain and repair the highly technical equipment used by the naval, military, and air forces of the British and their allies. The Corps has the approval of the Government of the United States.

CTC presents an excellent opportunity for trained technicians here to serve our own country in defense by learning in advance the operation of the new "radio-locator" and other complex radio apparatus. Members of the Corps receive training, transportation, food and lodging, clothing, and medical care without cost, besides being well paid. Men who have had at least two years' experience in servicing the better type of radio receivers are especially suitable, provided they also have some theoretical knowledge of radio transmission.

Information about the Corps will be

sent to every serviceman, member or not, who is interested. Address: National Office, Radio Servicemen of America, 1216 W. American St., Freeport, Illinois.

RSA CHAPTER CHATTER

Boston Chapter:

With the return of Director Ray Wyman from the RSA Board of Directors meeting in Chicago June 11-13, Boston Chapter has had pow-wows and started on another busy campaign. Enlargement of the Chapter, both in membership and in territory served, has been under consideration for some time and now goes into effect.

Boston Chapter also finds that with its increasing prestige, an increasing number of calls are being sent in for servicemen to fill the ranks of those called for military service. We expect this to be a bonanza period for the RSA serviceman.

—Hy Leve, Secretary

Chicago Chapter:

Chicago RSA looks forward to a new series of meetings—Jobber House Parties. It'll mean a real shindig every time, being held directly on the jobbers' premises. Refreshments and all are promised. This may be just what the doctor ordered to counteract the drop in activities usually experienced during this time of the year—we hope.

Our Annual Picnic—Sunday, July 13th. Present prospects are that it will be the biggest ever.

—Al Kilian, Secretary

Danville Chapter:

Thirteen members of the Danville Chapter left Danville on Friday the 13th of June at 4:30 A.M. headed for the RSA Convention and the Radio Trade Show in Chicago. As each one entered the station, it was quite evident that he could have easily slept another four hours, but by the time the train pulled out, the crowd was in full swing and all set for a big day. The day was spent profitably in viewing the various exhibits and attending the technical lectures. The fellows arrived home late at night with just as much pep as they had early in the morning. (Some had more!)

We held our annual Nomination of Local Officers June 26, and the election will be held at the July 10th meeting. Because of Nomination night, we did not hold our regular session of Radio School.

J. D. Allen, of the Allen Electric Company, passed away June 16, 1941, after an illness of several weeks. With the passing of Mr. Allen, RSA lost a staunch supporter. Mr. Allen always favored our organization, and his store was 100% RSA.

—From the "Servicemen's Dirt"

Duluth Chapter:

Our recent meetings have been held at various places in Duluth, Superior, and Cloquet. It is our belief that we have accomplished much. We have established minimum prices for car radio installations and for push-button resetting, and they are being adhered to by our group. Our regular RSA-NAB ads have been aired almost daily by WEBC, with copy written by our president as well. Various publicity stunts have been devised and carried out for the betterment of our own group and of RSA in general. Interesting speakers have been present at almost every meeting.

PRESIDENT'S LETTER

Johnstown, Penna.,
June 30, 1941.

Fellow Servicemen:

I appreciate more than I can say the confidence placed in me in my election to the National Presidency of RSA. It is an honor and an obligation, not to be lightly taken. I sincerely pledge myself to building a greater RSA.

RSA has shown considerable progress in the past. The hearty cooperation of the entire industry has been given us. We are the only National radio servicemen's organization having the sponsorship of the entire industry: of the Radio Manufacturers' Association, the Sales Managers Clubs, the National Association of Broadcasters, and the Radio Trade Publications. We are the radio serviceman's representative to the radio industry. RSA is an essential part of this most essential industry.

In the future, we are planning and working to make RSA even more the voice of the radio serviceman. Our dues—less than two cents a week—are now low enough to make membership possible to every serviceman in the country. And there certainly is value received: a membership certificate, a membership card, a window decalcomania, a year's subscription to a monthly technical magazine, access to the RSA Technical Helps Bureau,

the broadcasting "plugs" given RSA by NAB stations, the prestige of membership both to the public who are your customers and in the industry, a voice in the industry of which you are a part, and the opportunity to join in the activities, social, technical, and business, of an RSA Chapter where there is one near you.

Where can one get more for the money?

On behalf of the Board of Directors of RSA, I invite every serviceman of high ethics, legitimately engaged in the radio servicing profession whether he owns his own business or not, whether he resides in a town having a local chapter of RSA or some other serviceman's association, to join as a national member of RSA and gain these advantages of membership and add your voice to the ever increasing voice of RSA.

And to every present member of RSA, I ask your aid in telling about RSA, in showing your fellow servicemen the advantages of membership, in building an even greater RSA. We need every serviceman as a member and no serviceman can afford to be without RSA membership. Talk it up, fellow member!

Sincerely,

RADIO SERVICEMEN OF AMERICA

Ken Vaughan (Signed)
National President

This is but part of our activities, but from this it is apparent that this Chapter has been active during the first half of 1941 and intends to continue for the balance of the year. There is much to do and we intend to do it.

—Rudolph T. Luukinen, Secretary

Freeport Chapter:

New officers of the Freeport Chapter were elected at a recent meeting held at the home of a member of our Chapter living in a nearby town. Officers elected were: S. A. Frank, Chairman; Dale R. Foy, Vice-Chairman; and Winston F. Meyer, Secretary-Treasurer. A very

pleasant evening was enjoyed at the Hooker home, and excellent refreshments were served by our hostess.

—W. F. Meyer, Secretary

Southern New Hampshire Chapter:

Our capable Chairman, Arthur Sanborn of Wilton, N. H., made his annual trip to the RSA Convention and the Radio Trade Show in Chicago. His news of the material to be available under raw material restrictions is encouraging. Southern New Hampshire Chapter continues its happy relations with Radio Station WFEA and reports progress with its "Radios for Shutins" campaign.

Tricounty Chapter:

Members of the Johnstown, Pennsylvania, Tricounty Chapter are beginning to feel the shortage of certain radio parts. The treasurer has been instructed to buy up a large supply wherever they can be obtained.

A supply of rubber stamps bearing the RSA insignia will be obtained and given to members to be used to stamp on orders sent to jobbers and other firms. In this way, they will know that an RSA member is giving them their business. These stamps can also be used to mark chassis that have been serviced.

Our Chapter has two members serving in the United States Army: John Noll and William Hayes.

No date has been set for our annual picnic as we do not want to conflict with the Pittsburgh Chapter Picnic, as was the case last year. Every Johnstown member wants to attend the Pittsburgh affair, especially if it is held at Idlewild, which is only fifteen miles from Johnstown.

The Tricounty Chapter of Johnstown meets every second and fourth Tuesday of the month, second floor of the "Tavern," Main Street, Johnstown.

—Jesse Bolsinger, Secretary



Donald H. Stover, RSA's new national Executive Secretary.

(Continued from page 17)

units and complete receivers. Separate bulletins available on the Hammarlund Super Pro and HQ-120-X receivers. Hammarlund Mfg. Co., Inc., 424 W. 33rd St., New York, N. Y.

Hickok—Catalog of Radio Service Equipment. *Featured*—Model 202 Electronic Volt-Ohm-Milliammeter. Also Catalog No. 22, of Electrical Instruments. The Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio.

Howard—Bulletin No. 101, "The Howard Model 490 and the Art of Receiver Measurements." Also Folder 104 on Howard 1941 Communication Receivers. Howard Radio Co., 1731 Belmont Ave., Chicago, Ill.

Hygrade Sylvania—Service Hints, Vol. 3, containing 80 pages of useful data and service hints on radio receivers. Catalog sheets on practical equipment and sales aids for dealers and servicemen. Sylvania Tube Price List. A 12-page Tube Characteristic Chart including tube and base diagrams. Sylvania Tube Base Chart, suitable for wall mounting. Sylvania Interchangeable Tube Chart, suitable for wall mounting. The "Radio Station Finder"—a complete listing of all North American regional standard broadcast stations. Hygrade Sylvania Corp., Emporium, Pa.

Hytron—Four-page Catalog of Transmitting and Special Purpose Radio Tubes. *Featured*—The Bantam Junior Miniature Tubes. Hytronic Laboratories, Salem, Mass.

ICA—New 8-page catalog of auto radio antennas, noise suppressors, and antennas for f.m. and television. *Featured*—The "Rocker" Aerial, a variable angle antenna to fit the contours of all car bodies. Insuline Corp. of America, 30-30 Northern Blvd., Long Island City, N. Y.

IRC—An 8-page catalog of volume con-

trols, insulated resistors, power resistors, rheostats, and attenuators. *Featured*—Type D Universal Size Volume Controls with Tap-In Shafts. International Resistance Co., 401 N. Broad St., Philadelphia, Pa.

Jackson—Sixteen-page catalog of 1942 Radio Testing Equipment. *Featured*—Jackson "Service Lab" Units, consisting of special rack-type cabinets containing complete servicing equipment. The Jackson Electrical Instrument Co., 129 Wayne Ave., Dayton, Ohio.

Jensen—Condensed catalog No. 125, of 8 pages, covering the Jensen line of loudspeakers, projectors, speaker cabinets, and speaker transformers. *Featured*—the new Jensen "Hypex" Projectors, and the Type "AP" Speech Master for paging, public-address and intercommunications systems. Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago, Ill.

Johnson—Catalog No. 966 of radio transmitting equipment for amateur and commercial applications. E. F. Johnson Co., Waseca, Minn.

Kainer—Six-page folder covering the Kainer Reflex Trumpets and Sound Projectors. Kainer & Co., 761 W. Lexington St., Chicago, Ill.

Ken-Rad—An 8-page folder of Selling Helps for Dealers, principally display material. Ken-Rad Tube & Lamp Corp., Owensboro, Ky.

Logan—Catalog sheet covering the "Speed-X" line of telegraph keys, practice sets and semi-automatic keys. Les Logan Co., 646 Jessie St., San Francisco, Calif.

Mallory—1941 catalog of precision products, covering volume controls, switches, wire-wound resistors, electrolytics, Vibrapacks, and radio hardware. 32 pages. Also 4-page bulletin on Mallory Noise Filters. P. K. Mallory & Co., Inc., Indianapolis, Ind.

Meck—New 24-page catalog of Audio-graph Sound Equipment for all applications. *Featured*—The Audiograph "Frequency Equalized" Matched-Unit Sound Systems. John Meck Industries, 1313 W. Randolph St., Chicago, Ill.

Meissner—1941 general catalog, of 16 pages, covering the company's line of recorders, receivers, receiver kits, r-f and i-f coils, variable condensers, relays, etc. *Featured*—the Uni-Signal Selector, a combination electrical-mechanical-acoustical filter for c-w reception. Meissner Mfg. Co., Mt. Carmel, Ill.

Million—Catalog sheets of the Million Model 40-15C Amplifier and Million Sound Systems, Model Q Signal Generator, Zero-Center Vacuum Tube Voltmeter, Model DD Tube Tester, and Model GM Multi-Meter. Million Radio & Television, 1617 N. Damen Ave., Chicago, Ill.

National Carbon—Eveready battery replacement guide for portable receivers, listed alphabetically by receiver make. Also catalog sheet on the complete line of Eveready radio batteries. National Carbon Co., Inc., 30 E. 42nd St., New York, N. Y.

Ohmite—Catalog No. 17, containing 12 pages and covering the Ohmite line of wire-wound rheostats, fixed and adjustable resistors, attenuators, precision resistors and tap switches. Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago, Ill.

Operadio—Catalog No. 16 covering the company's line of Unit Matched Sound Equipment and accessories. Also 3 bulletins on paging and intercommunicating systems. *Featured*—Model 415-ZA "Flexifone" intercommunicator. Catalog sheet available. Operadio Mfg. Co., St. Charles, Ill.

Oxford—Bulletin No. 400 covering general purpose and public-address p-m and electrodynamic speakers and speaker transformers. *Featured*—Model 3ZM-CA midget auxiliary p-m speaker. Oxford-Tartak Radio Corp., 915 W. Van Buren St., Chicago, Ill.

Park—Catalog No. 1141 covering the Xcelite line of radio tools. Park Metalware Co., Inc., Orchard Park, N. Y.

Par-Metal—Catalog sheet covering metal racks, panels and cabinets. Par-Metal Products Corp., 3262 49th St., Long Island City, N. Y.

Permo—"Permo Pointers," a 16-page booklet of pointers on better recording. Also leaflets on Fidelitone Floating Point and De Luxe Fidelitone phonograph needles, and Fidelitone Recording Stylus. Permo Products Corp., 6415 Ravenswood Ave., Chicago, Ill.

Precision—1941 catalog of precision test equipment. Includes treatise on the principles of dynamic mutual conductance tube testing. 12 pages. Precision Apparatus Co., 647 Kent Ave., Brooklyn, N. Y.

Premax—Catalog No. R-42, of 12 pages, listing antennas for amateur and commercial applications. Premax Products, Division Chisholm-Ryder Co., Inc., Niagara Falls, N. Y.

Presto—Catalog sheet on new Model K portable recorder. *Featured*—Leaflet on

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The new WHIZ ELECTRIC TOOL is the handiest power tool ever made. A rugged tool for power and precision work. Drills through ¼ inch iron plate in 42 seconds or engraves intricate designs. Handles any material: Metals—Woods—Alloys—Plastics—Glass—Steel—etc. Saves time. Eliminates labor. Plug into any socket AC or DC, 110 volts. Chuck ¼ inch capacity. Ball bearing thrust. Powerful, triple-gear motor. STANDARD MODEL, with Normal Speed (uses 200 different accessories, instantly interchangeable.) Price Only \$7.95



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new glass-base recording discs and aluminum-disc recoating service. Presto Recording Corp., 242 W. 55th St., New York, N. Y.

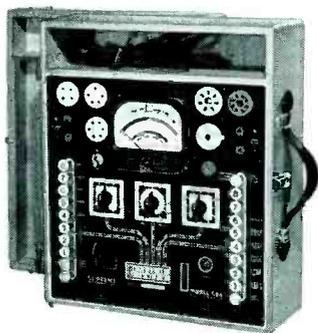
Quam—Catalog No. 61 covering Quam speakers and speaker cabinets for service and sound engineers. Quam-Nichols Co., Cottage Grove & 33rd Place, Chicago, Ill.

Radiart—Catalog sheet on "Selecticoil" and standard model auto antennas. Also 1941 Radiart Vibrator Replacement Guide. The Radiart Corp., Cleveland, Ohio.

Radio City—Catalog No. 124, of 16 pages, covering the company's complete line of test equipment. *Featured*—Model 661 Electronic Multitester, and Model 417 Appliance Tester. Leaflets available. Radio City Products Co., Inc., 88 Park Place, New York, N. Y.

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Could there be more convincing proof of SUPREME quality, accuracy, dependability and fair price than the fact that servicemen who know their test equipment have invested over \$5,000,000.00 in over 100,000 SUPREME testers?



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SUPREME
GREENWOOD, MISSISSIPPI, U. S. A.

Ray-O-Vac—Leaflet on new leak-proof dry cell for flashlights and personal radios. Ray-O-Vac Company, Madison, Wis.

Raytheon—Characteristic data chart, 14th edition, 28 pages. Gives tube characteristics, interchangeable types, dimensions, base connections. Price 10 cents. Raytheon Production Corp., 55 Chapel St., Newton, Mass.

RCA—Radiotron preferred type receiving tube price list and renewal guide, revised to June 1, 1941. Radiotron sales aid catalog for dealers and servicemen. Six-page folder on the RCA Dynamic Demonstrator II. Form TT-100, a catalog of RCA transmitting and special purpose tubes; 16 pages. RCA guide for transmitting tubes, a manual for amateurs and engineers. Price, 25 cents. *Featured*—No. 164 RCA Channel Converter for uhf signal tracing, and the No. 170 RCA Audio Channel, for signal tracing in audio systems. Catalog sheets available. Tube & Equipment Division, RCA Manufacturing Co., Inc., Camden, N. J.

Readrite—New catalog sheet, No. 63-R, on Readrite meters and testers. Readrite Meter Works, Bluffton, Ohio.

Recordisc—Four-page folder on Recordisc recording blanks and recording accessories. The Recordisc Corp., 395 Broadway, New York, N. Y.

Rider—New folders on Rider Manuals and Rider Books. *Featured*—Rider Manual, Vol. XII, with "Clarified Schematics," and two forthcoming books on Automatic Record Changers and Aligning Philco Receivers. John F. Rider Publisher, Inc., 404 Fourth Ave., New York, N. Y.

Shure—Catalog 153 of Shure microphones, pickups, cutters, stands and accessories. 8-page folder on new Shure Uniplex and Unidyne microphones. *Featured*—New Shure "Hi-Lo" Lightweight Crystal Pickup with permanent sapphire point, with output of 1.4 volts and needle pressure of 1 ounce. Catalog sheet available. Shure Brothers, 225 West Huron St., Chicago, Ill.

Simpson—Catalog No. 14, of 20 pages, covering the company's line of radio and television test equipment and panel meters. *Featured*—Model 510 Signal Tracer. Simpson Electric Co., 5208 Kinzie St., Chicago, Ill.

Small—Catalog sheet on high-speed electric motor hand tools and accessories. Small Motors, Inc., 1733 Milwaukee Ave., Chicago, Ill.

Solar—Catalog 11, Solar capacitors. Also 4-page folders on Solar Model CE Capacitor Exam-eter and Solar Condenser Quick-Check Analyzer. Solar Mfg. Corp., Bayonne, N. J.

Specialties Co.—Catalog No. 7 on Marvel line of relays, wire and cables, switches, etc. Specialties Mfg. Co., 3152 Cass Ave., Detroit, Mich.

Sprague—1941 condenser catalog, of 20 pages. Catalog sheet on Sprague Koolohm Resistors. Four-page instruction folder on use of Sprague Master Interference Analyzer. Eight-page folder on Radio Interference Elimination for Public Utilities. Sprague Manual of Radio Interference Elimination; price, 25 cents. Sprague Products Co., North Adams, Mass.

Stancor—Complete transformer catalog, 28 pages. Service Guide and Replacement Transformer Catalog, 7th Edition, 56 pages. Packs For All Power Change Purposes, 12 pages. Standard Transformer Corp., 1500 N. Halstead St., Chicago, Ill.

Supreme—Catalog, radio testing instruments, 12 pages. Also bulletins on How to Analyze Your Own Shop, and How to Build Your Own Test Bench. Supreme Instruments Corp., Greenwood, Miss.

TCA—Catalog, Clarion sound systems, 24 pages. Also folder on The Clarion Association of Sound Distributors. Transformer Corp. of America, 69 Wooster St., New York, N. Y.



In 25, 75, 150, 250, 450 and 600 v. D.C.W. Single, dual and triple sections. Popular capacities. Unit illustrated actually measures 1-3/16 x 13/16 x 2-7/16 in., barely 10% larger than pictured.

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Thordarson—No. 352-F replacement transformer encyclopedia, of 32 pages. Catalog 600-F, covering the Thordarson line of amplifiers. Catalog No. 400-F, covering the Thordarson line of transformers. Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, Ill.

Tonofon—Folder on phonograph needles, home recording discs and accessories. The Tonofon Co., 15 E. 26th St., New York, N. Y.

Trimm—Catalog sheets on Trimm headsets and hearing aid units. Trimm Radio Mfg. Co., 1770 W. Berteau Ave., Chicago, Ill.

Triplett—Catalog A, covering the line of panel meters. Catalog T, covering the line of radio test equipment. Four-page folder on precision portable instruments. *Featured*—Model 625-T Wide-Range Portable Volt-Ohm-Ammeter. The Triplett Electrical Instrument Co., Bluffton, Ohio.

Tung-Sol—14-page booklet titled "Selling Radio Service." Tung-Sol Lamp Works, Inc., Newark, N. J.

Turner—4-page catalog on Turner microphones and microphone accessories. Turner Vibrator Manual for Radio Service Engineers; 16 pages. *Featured*—Turner Push-Pull Vibrators. Descriptive folder available. The Turner Co., Cedar Rapids, Iowa.

University—Catalog No. U6-41 on University High Efficiency Reflex Speakers. University Laboratories, 195 Chrystie St., New York, N. Y.

Utah—1941 catalog covering the Utah line of speakers, vibrators and transformers, and Carrier parts. Also 4-page Catalog Supplement on the new Utah reflex trumpets, dual speaker combination, and field excited speakers. Utah Radio Products Co., 820 Orleans St., Chicago, Ill.

UTC—Bulletin PS-404, of 24 pages, covering the UTC line of transformers, chokes, equalizers and filters. *Featured*—the Steadi-Volt automatic voltage regulator and the Varitran voltage control unit. Catalog sheet available. United Transformer Corp., 150 Varick St., New York, N. Y.

Vasco—Catalog sheets on Hotspot soldering irons and solder pots. Vasco Electrical Mfg. Co., 4116 Avalon Blvd., Los Angeles, Calif.

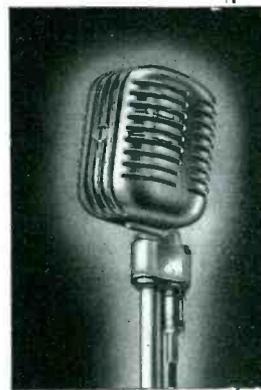
Vulcan—Folder and catalog sheet on Vulcan and Mercury soldering irons. Vulcan Electric Co., 600 Broad St., Lynn, Mass.

Walco—Catalog sheets on Walco straight and bent shank sapphire playback needles, cutting styli and recording discs. *Featured*—the Walco Jewel-Point Pickup, with low needle pressure and high voltage output. Electrovox Company, 74 Franklin St., East Orange, N. J.

Walsco—Catalog No. 42, of 8 pages, covering the Walsco line of radio cements, finishes and lubricants, dial belts, etc. *Featured*—the Walsco Unibelt, an adjustable dial belt; and the Walsco Staple Driver. Walter L. Schott Co., 5266 W. Pico Bvd., Los Angeles, Calif.

Ward—1941 antenna catalog and guide, covering auto antennas. *Featured*—the Ward Flex-Angle, an adjustable car aerial.

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TURNER CARDIOID Mike

Here's the answer to the sound man's problems! Turner 101 Cardioid microphone deals a death-blow to feedback! Extremely sensitive to sounds originating in front of the mike—this unit is dead as a doornail in the rear; 2-element generator offers you the best features of both the velocity and dynamic, in the most efficient microphone yet produced by modern, precision engineering. Where the going is tough, and acoustic conditions practically impossible—the 101 will deliver!

101A Standard, List \$55.00
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RADIO SERVICE-DEALER, JULY, 1941

The Ward Products Corp., Ward Bldg., Cleveland, Ohio.

Ward Leonard—Circular 507, covering wire-wound fixed and adjustable resistors, rheostats and line voltage reducers. Circular 507B, covering relays for automatic control, such as remote, keying, band switching and time delay. Ward Leonard Electric Co., 37 South St., Mount Vernon, N. Y.

Webster-Chicago—Catalog No. 240, on Amplicall industrial and office intercommunicators and paging systems. Catalog No. 440, covering Webster sound equipment. *Featured*—"Master" Tandem Amplifiers, with separate mixer and power units. The Webster Co., 5622 Bloomingdale Ave., Chicago, Ill.

Webster-Rauland—Catalog 141 of 16 pages, covering the company's line of sound systems and accessories, and portable recorders. *Featured*—"Bi-Power" Sound Systems, utilizing a new system of biasing. Also catalog sheet on the Webster-Rauland line of portable recorders, record players and automatic changers. The Rauland Corp., 3825 Armitage Ave., Chicago, Ill.

Wirt—Catalog of Wirt resistors, ignition suppressors, volume controls, switches and voltage regulators. Wirt Company, 5221 Greene St., Philadelphia, Pa.

NEWS

Special RCA Mailing—The RCA Manufacturing Co. has made the first of a scheduled series of mailings of supplementary information to owners of RCA Test Equipment.

The mailing comprises five pieces: an announcement letter from *W. H. Bohlke*, Director of Test Equipment Merchandising; a reprinted article on the development of the Chanalyst, by *John F. Rider*; an 8-page booklet of special application information on the RCA Rider Chanalyst; a 4-page gain data instruction bulletin for RCA Victor receivers, and a sheet describing the "Electronic Eye" indicators and associated circuits used in the RCA Rider Chanalyst.

For Trainees—The editors of *Sylvania News*, customer house organ of the Hygrade Sylvania Corp., Emporium, Pa., have arranged to send the publication regularly to the respective army post addresses of readers who have answered the call to the colors. At the same time, correspondence relating to radio and radio tube technical problems is solicited and also, trainees are invited to write of their personal experiences in Army life for possible editorial coverage.

"Defense & You"—Of interest is the pithy folder entitled "Defense and You," which is now being distributed by Solar Mfg. Corp., Bayonne, N. J.

Squarely facing the grave situation of priorities, material shortages and inevitable readjustments necessitated by America's stern drive for an impregnable defense, this folder has attracted wide attention.

It is of special value to condenser users, as it surveys the present difficulties of this industry in particular, and provides a list of recommended condenser types which

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Two important reasons why Westminster and Hour Chime Systems offer a quick profit outlet are: first, more and more churches, funeral homes, cemeteries, public and semi-public buildings, office buildings, estates and manufacturing plants, are installing them; and second, installations usually sell for more than the average sound installation; hence, you make a greater profit. Sunco Chime Systems automatically play either the Westminster or Canterbury Chimes, or the Angelus. Complete systems playing only hour chimes can also be furnished. Sunco Chime Systems are installed and serviced by qualified sound men exclusively.

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Name

Address

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will be readily available. Copy on request to manufacturer.

Ken-Rad—Ken-Rad Tube & Lamp Corp., Owensboro, Ky., announces the appointment of *Leslie E. Septer*, as Assistant Sales Manager in charge of renewal tube sales.

Marty Joins Shure—S. N. Shure announces that *Joe Marty*, formerly Secretary of the Radio Servicemen of America, is now associated with Shure Brothers, Chicago.

Disc Display—The RecorDisc Corp., 395 Broadway, New York City, has prepared an attractive display fixture which is be-



ing distributed to dealers through their jobbers. The base is of wood construc-

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tion, patterned to hold 3 sizes of home recording blanks as well as consumer literature. The large double-wing poster in the background is devoted to the first of the RecorDisc promotion contests. This poster is interchangeable and will be replaced periodically with other timely display material. Colorful and attractive, the display complete measures 20" x 24" x 7".

Lafayette Promotes—Radio Wire Television, Inc. (Lafayette Radio), New York City, announces the appointment of *Guy Maken* as purchasing agent. Mr. Maken has served for some time as assistant purchasing agent and now steps into the post vacated by *Ben Miller*, who has resigned to join Meissner Mig. Co.

♦
EICOR

Rotary Converter—Converts direct current to alternating current for amplifiers, receivers, transmitters, etc. Compact, for portable or permanent use; available for 6, 12, 32, 115, 230 volts or other standard d-c input. Standard a-c output. Equipped with ball bearings and available with or without filter. By Eicor Co., 1060 W Adams St., Chicago, Ill.

♦
DUOTONE

Chromium Needles—Individually shadowgraphed chromium needles, five to a package, each needle being good for 50 playings. Particularly adaptable to record changers. By the Duotone Co., Inc., 799 Broadway, New York, N. Y.

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It will pay you to join

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RSA, through the courtesy of the National Association of Broadcasters, gets frequent "plugs" on radio stations which advise their listeners to have their servicing done by RSA members. Also, as a member, you may at any time consult the RSA Technical Helps Bureau. Then there are Chapter activities, if you are in an RSA Chapter area, such as lectures by leading radio engineers, social activities, and many others from which you may benefit by becoming a Chapter member.

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Nat'l Headquarters: 1216 W. American St., Freeport, Ill.



RSA is the only national radio servicemen's organization having the sponsorship of the Radio Manufacturer's Association, the National Association of Broadcasters, the Sales Managers' Clubs, and the Radio Trade Papers. Anyone of high ethics, legitimately engaged in the radio servicing profession, whether he owns his own business or not, is eligible for membership in the National Association of RSA. Act now!

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I enclose \$1.00 and apply for national membership in RSA.

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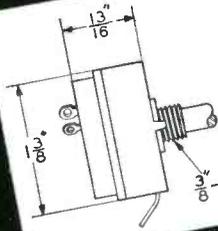
Address

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Radio Service-Dealer—July '41

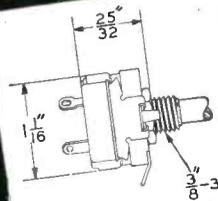
The CENTRALAB Family

of VOLUME CONTROLS



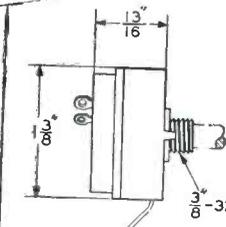
STANDARD

Long famous for the reliability of Centralab's non-rubbing contact and long wall type resistor. Available plain, or with one, two, or three taps, and with SPST, DPST, or SPDT Underwriters Approved switches.



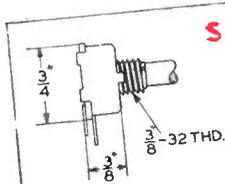
MIDGET

Small in size, but large control efficiency due to the long straight path of the wall type resistor. Fits well in crowded chassis as solder lugs do not project far beyond the control radius of $17/32$ ". Available single, dual, or triple, plain, or tapped, with SPST, SPDT, DPST, and a special dial lite push switch for battery sets.



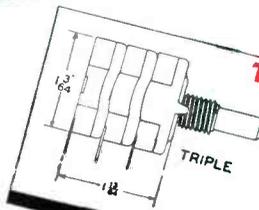
WIRE WOUND RADIOHM

Identical in size and appearance with the Standard Radiohm except has brown colored base. Resistances range from 2 ohms to 10,000 ohms. Rating 3 watts. Furnished plain or with SPST, SPDT, or DPST Underwriters Approved switches.



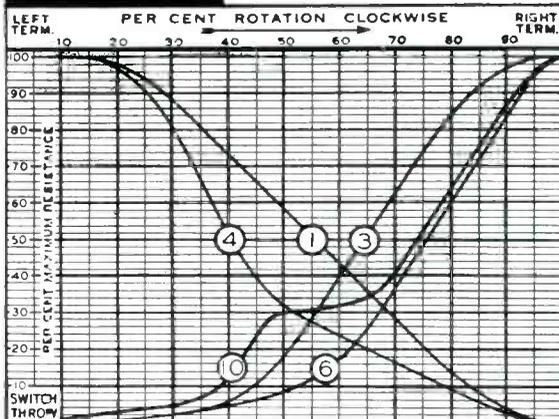
SUB-MIDGET

The smallest diameter reliable control. Long wall type resistor gives low noise level. Rapid Transfer from resistor to metal shell gives maximum of heat from resistor to metal shell gives maximum load rating of $1\frac{1}{2}$ watts. No switch or taps. Available as grounded or insulated rheostat or potentiometer with solid or tubular shaft.



TWIN AND TRIPLE CONTROLS

Two or three sections assembled in tandem for special purposes. Each section fully shielded and has independent connections. All variable controls also attached to a single shaft. Twin one inside the other. Supplied with or without Underwriters Approval snap switches.



The resistor curve of a volume control is more important than its overall resistance... that is why Centralab controls are furnished with the variety of curves shown here. Curve six is most widely used for high resistance radio grid and diode controls. Curve 1, or 4, are best for C bias, and Curve 3 for antenna C bias. Curve 10 is used on tapped controls.

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THE *Signal's* THE THING!

... Radio Testing Should be Done on the Basic Signal and Not Depend Upon the Interpretation of Secondary Effects

Proper signal reproduction is the basic function of radio and communication equipment.

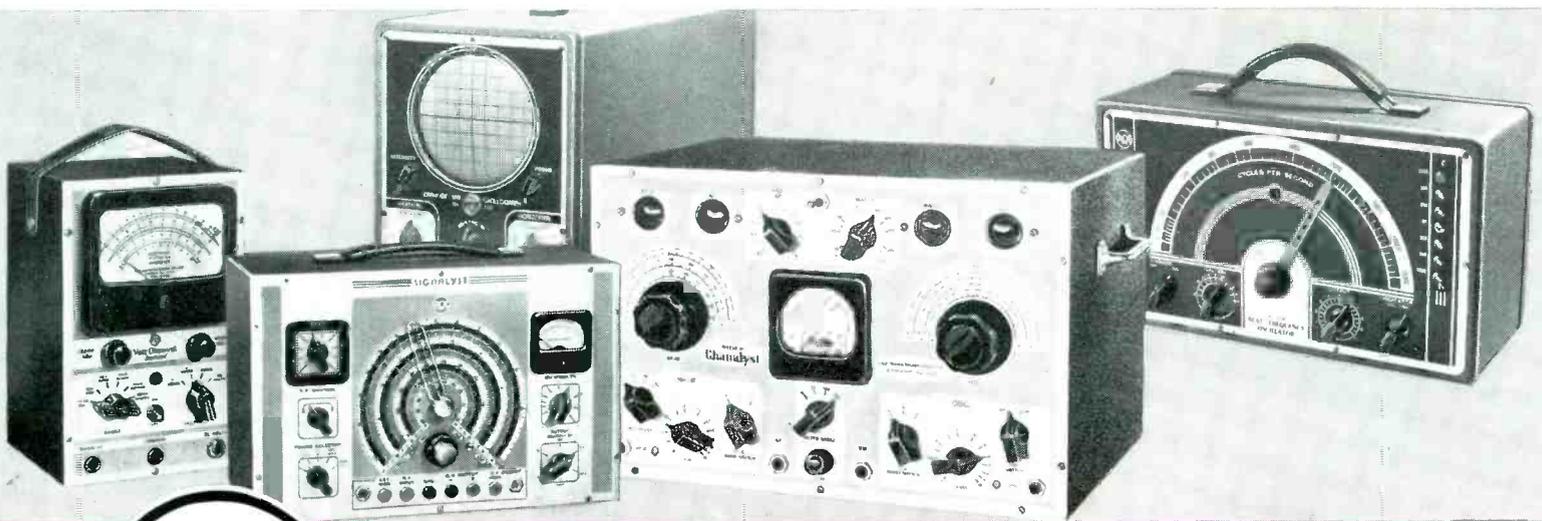
When this fails, there can be no more direct method of locating the cause than by checking the progress of the signal through the instrument—and that is exactly what RCA Signal Tracing Instruments are designed to do.

Instead of depending upon the interpretation of secondary effects, RCA Instruments go right to the source of the trouble. By picking up the signal where it is present in any circuit they quickly indicate the exact point in the circuit sequence where the signal ceases, weakens or becomes distorted. Once this point has been found, the trouble can quickly be isolated by using one of the RCA Electronic Measuring Instruments. These instruments make it possible to measure voltages with-

out loading the circuit sufficiently to appreciably disturb its normal functioning. Here again, the basic conditions of signal operation are maintained.

RCA Signal Generators are designed to give signals at r-f, i-f or audio frequencies. Sufficient controls and adjustments are available so that a signal can be reproduced which will approximate closely the normal signal encountered in the particular circuit being tested.

Thus, Signal Tracing is the keynote behind all RCA Test Equipment. Because RCA has recognized the basic servicing idea that "The Signal's the Thing," instruments like the RCA-Rider Chanalyst, VoltOhmyst, Signalyst and various others have set new high standards in radio and communication servicing.



Test Equipment

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