

RADIO AND TELEVISION

Service News

A PUBLICATION OF THE RCA ELECTRON TUBE DIVISION



APRIL
1962



Vol. 27, No. 1

Overwhelmed by stockroom bulge? Here's welcome news: Service technicians no longer need suffer nor fear the "nightmare"-effects of stockpiling an over-extensive variety of picture-tube types. Now, you can fill half of your picture-tube replacement requirements with RCA's 21CBP4A, 21AMP4A, 21ZP4B, and 21YP4A. Made with the finest parts and materials including a re-used envelope, these four "Universal" Silverama[®] types replace 33 industry types. (For further details, see story on page 4.)

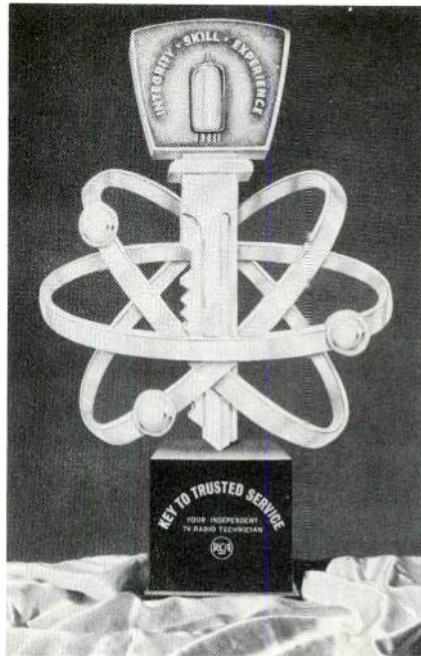
National Magazine and Television Advertising Supports Dynamic 'Key to Trusted Service' Campaign that Lauds Competence and Integrity of TV-Radio-HiFi Technicians

Greater sales through increased public recognition—that's your reward for making the most of RCA's compelling new "Key to Trusted Service" program. It's presented to focus consumer attention on your technical competence and professional integrity as an Independent TV-Radio-HiFi Technician.

Incorporating all the ready-made promotional tools you need to dramatize your important role in the community, this forward-looking campaign is outstandingly supported by national magazine and television advertising. A full-page ad in the April 7th issue of TV GUIDE, for example, will carry the "Key to Trusted Service" message to more than 7,500,000 homes. Nationwide impact will be further heightened by RCA's presentation of a "Key Service Television Commercial" on the popular NBC network show, "Walt Disney's Wonderful World of Color." First showing of this commercial is scheduled for Sunday, April 8th.

Both the ad and the TV commercial salute the service technician who proudly and prominently displays the "Trusted Service Key," a 14-inch-high statuette that symbolizes the theme of the current RCA program. This handsome trophy vividly highlights the slogan, "Integrity • Skill • Experience." These key words represent your rallying point for building customer acknowledgment of your high quality of product and service—backed by the leading name in the industry, RCA.

Ask your local RCA distributor how you can obtain *your* "Trusted Service



Here is the "Trusted Service Key" (1A1226)—heart of RCA's dynamic new advertising and sales promotion program to increase your sales and prestige.

Key" (1A1226). It's one of many new RCA promotional, advertising, service, and business aids which he can provide to help you put yourself "across" in your trading area and, thereby, gain the widest possible customer acceptance.

Consider the "Trusted Service Window Display" (1A1228), designed to impress your customers with your highly specialized skill and dependability as an independent service technician. Dynamic and clear, this display *belongs* in your store window to invite every passerby to benefit from your most valued asset—reliable service.

Another way to point up your technical competence is by your wearing the "Key Service Lapel Button" (1A1227) when you wait on your customers at the counter or make service calls at their homes.

Then, too, there's the "Key Service Postcard" (1A1231A). Send one to every TV, radio, and hi-fi owner on your mailing list. This card is intended to promote sales and customer confidence through a direct, "good neighbor" approach.

You may also want to take advantage of the "Key Service Window

Streamer Kit" (1A1230)—a colorful assortment of product and service messages imprinted on a clear acetate to resemble top-quality decals. Placed on your store-front, window, door, or inside walls, these streamers not only will arouse customer interest in the RCA tubes you sell and the TV, radio, and hi-fi repair services you offer, but they also will direct attention to the RCA Key Chain and RCA Mystery Chest.

Ideal as a giveaway, the "Trusted Service Key Chain" (1A1237) is doubly practical as well as attractive. It includes a pocket pencil-sharpener resembling a tiny television set complete with picture. When you advertise it as a free item through the "Key Chain Window Streamer" (1A1230E), "Key Chain Postcard" (1A1231B), or "Key Chain Ad Mat" (1A1232B), this key chain—with your imprint—can serve as a valuable reminder of your name, store location, and "Key Service" theme.

The "Mystery Chest" promotion—another "Key" idea that can be used to draw customers and prospects—features a commanding in-store display (1A1229) containing a locked chest and an assortment of keys. Some of the keys open the lock. If your customer picks the right key and opens the lock, he receives the free gift you placed in the chest. (It is suggested, of course, that you check your state and local laws to see if they prohibit or affect games of chance such as this.)

What gifts should you enclose in the chest? They're of your own choosing. Some suggestions: small radios,



Set RCA Silverama's new "Backlighted Display" (1D1139) in your store window or on your counter or display shelf.



RADIO AND TELEVISION

RCA RADIO & TELEVISION SERVICE NEWS is published in the interest of dealers and service technicians. It is written to assist them in providing better service, and to foster the growth of their business by supplying them with information on the latest troubleshooting and sales promotion techniques, sales and service aids, together with invaluable data on RCA tubes, transistors, batteries, sound tape, and test equipment.

RCA RADIO & TELEVISION SERVICE NEWS is a bi-monthly publication of the RCA Electron Tube Division, Harrison, New Jersey.

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1962

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Radio Corporation of America

Harvey Slovick
Editor

TV GUIDE

Your Key to Trusted Service
A Tribute from RCA to the Independent TV-Radio-Hi Fi Technician

This RCA symbol of recognition acknowledges the competence and integrity of your independent service technician. His special skills assure the highest standards of maintenance in television, radio, and high-fidelity equipment. You can rely on his technical judgment. You can depend on his ability and experience. You can put your trust in the job he does for you.

RCA The Most Trusted Name in Electronics

See Walt Disney's Wonderful World of Color—Sunday nights 8:00-9:00 P.M.

REMEMBER THESE DATES: APRIL 7TH AND APRIL 8TH—To bring the “Key to Trusted Service” message into over **7,500,000 TV homes**, RCA will present this full-page advertisement in the April 7th issue of **TV GUIDE**. In addition, a “Key Service Television Commercial” will have its first NBC-network showing Sunday evening, April 8th, on “Walt Disney’s Wonderful World of Color.”

(Registered Trade Mark of the United States Rubber Company) plastic, one of the lightest and most rugged materials made, this caddy’s modern finish resists marring and staining and can be cleaned with soap and water. A special, heavy-duty, chrome-steel mirror is built into the inside cover to facilitate picture-tube adjusting.

For your comfort and professional appearance, there’s a new selection of uniforms for all-season wear. This RCA selection consists of an orlon uniform for cold weather; an orlon-nylon-cotton uniform and a cotton uniform for mild weather; and a tropical-worsted uniform for those steamy hot days. Also



Six ad mats (1A1232A through 1A1232F) are offered for local newspaper placement.

magnetic tape, service contracts, free TV tune-ups, or French perfume (1A1238). You can also give the key chain as a consolation prize to those who don’t open the chest.

To call attention to your Mystery Chest, use the “Mystery Chest Window Streamer” (1A1230F), “Mystery Chest Postcard” (1A1231C), and “Mystery Chest Ad Mat” (1A1232C).

With today’s heavy emphasis on television for home entertainment, it is only natural that the “Key to Trusted Service” should stress service-dealer capability and RCA tube quality in this area. Most representative of unsurpassed tube quality in television is RCA Silverama®, the picture tube designed for perfection—from precision electron gun and smooth, grain-free phosphor screen to its carefully cleaned, tested, and inspected reused envelope. This outstanding picture tube will again be featured in a special commercial scheduled for Sunday evenings, May 6th and June 17th, on the NBC-TV network show, “Walt Disney’s Wonderful World of Color.”

Foremost among the “Key to Trusted Service” program’s in-store promotional material advertising RCA Silverama is the new “Backlighted Display” (1D1139). It will brighten up any sales area offering good day-and-night visibility. Set this display in your store window or on your counter or display shelf to serve as a constant customer reminder of the “Most Lifelike Picture Ever!”

Looking for other Silverama promoters? You’ll find them in the “Key Service Window Streamer Kit” (reviewed above), as well as in your RCA distributor’s current array of outstand-

ing new RCA ad mats and service aids.

Two radio scripts (1A1223) and six newspaper ad mats (1A1232A through 1A1232F) are obtainable as part of the “Key to Trusted Service” campaign. Each one can be easily employed to carry your product and service messages to customers and prospects. You merely add local data, your store name, and your address.

What service and business aids are available through the “Key” program?

Heading the list of valuable work-aids is the newest member of RCA’s family of service-approved tube caddies. While representing “high style” in compact design, the recently introduced “RCA Lightweight Tube Caddy” (1A1241) holds up to 210 Royalite

included are shirts to match in dacron and cotton, in long or short sleeves, and in regular or convertible collars.

Your RCA distributor is also offering a combination sign and clock—RCA’s “Rotating Color Wheel Clock” (1A1240), an attention-getting addition to any in-store or window display.

(Continued on next page)

The “Trusted Service Window Display” (1A1228) dramatizes your greatest asset—reliable service.

KEY TO TRUSTED SERVICE
Your Independent TV-Radio Technician

RCA

KEY TO TRUSTED SERVICE
Your Independent TV-Radio Technician

'Key to Trusted Service'

(Continued from preceding page)

With a constantly changing kaleidoscope effect in brilliant red, white, and blue, this illuminated electric time-piece features the message, "TV-Radio Service."

Another dual-purpose business aid: the "Key Service Change Mat" (1D1137), for those small-change transactions. Place it on your store counter to promote RCA tubes while adding a "Thank you—call again" message for the purchaser.

Bearing in mind that it's the little things that count, too, you can make good use of RCA's new "TV Warranty Sticker" (1D1140). A repeat-business builder, it's perfect for placement on the back of every TV set you service with a Silverama picture tube. This sticker can feature your imprint. And there's space for writing in the date covering the warranty period of the RCA picture tube you installed. Every TV-set owner should appreciate having this information handy, and your name remains on the TV set for future customer reference.

* * *

Now that you've been "keyed" on RCA's latest campaign to stimulate your sales by sparking consumer interest in your professional services, it's your turn to capitalize on your opportunities at hand. Contact your RCA distributor as soon as possible. The sooner you put the "Key to Trusted Service" program to work for you, the sooner you'll derive the business benefits that will result from your active participation.

It's been rumored that many owners of the RCA WT-110A Automatic Electron-Tube Tester still do not possess Supplement I to the "Card-Punch Data" booklet ICE-234. If you're in need of a copy, be sure to ask your local RCA distributor. This supplement provides card-punching data on more than 125 tube types. Special information is also given for testing the new novar types, 10-pin tube types, and 12-pin integral base types, with instructions for building the necessary adaptor to test these tubes on the WT-110A. Optional resale price of Supplement I is 50¢.



Now! Four RCA Silverama 'Universal' Picture-Tube Types Can Fill Half Of Today's Replacement Requirements

RCA has taken a major step forward in its all-out program to reduce your picture-tube inventory requirements. Result: You now can satisfy half of your customers' picture-tube replacement needs by replacing 33 industry types with only four RCA "Universal" Silverama® types—the 21CBP4A, 21AMP4A, 21ZP4B, and 21YP4A. (This 50% coverage is based on EIA national-movement estimates for all picture-tube types concerned.)

Part of RCA's new family of picture tubes designed to help you fill a maximum number of sockets with a minimum number of types, the 21CBP4A replaces 19 industry types, while the 21AMP4A replaces eight types, and the 21ZP4B and 21YP4A three types each. Every one of these outstanding Silverama tubes is made with an all-new electron gun, the finest parts and materials, and an envelope that is carefully inspected, cleaned, rescreened, and tested prior to reuse to assure your customer of the best TV pictures possible from his set.

In terms of convenience, economy, and efficiency, the tremendous strides in effecting fewer types to meet replacement requirements should win the applause of every service technician in the nation. Just *think* of what "Universal" Silverama picture tubes mean to *you*; then *act* by ordering the 21CBP4A, 21AMP4A, 21ZP4B, and 21YP4A from your RCA distributor as soon as possible.

Imagine! No longer must you stockpile the 33 picture tubes (or, more likely, have to run to your distributor every time you have a call for one of these industry types). Instead, you merely keep the four RCA "Universal" Silverama tubes within easy reach for

quick service. That way you will gain a competitive, time-saving edge by being able to take care of 50% of your picture-tube replacements without unnecessary delays caused by excessive inventory-handling and bookkeeping.

While it is recommended that you maintain a supply of at least one RCA-21CBP4A, -21AMP4A, -21ZP4B, and -21YP4A in your shop at all times, you should also consider the practicality of carrying one of each of these four "Universal" tubes on your service truck. By having them readily available when you make house calls, you thereby can speed-up your at-home picture-tube sales and installations.

Here's a run-down on RCA's four Silverama picture tubes and the industry types they replace:

- **RCA-21CBP4A**—your "Universal" replacement for types 21ALP4, 21ALP4A, 21ALP4B, 21ANP4, 21ANP4A, 21ATP4, 21ATP4A, 21ATP4B, 21BAP4, 21BNP4, 21BTP4, 21CBP4, 21CBP4A, 21CBP4B, 21CMP4, 21CVP4, 21CWP4, 21DNP4, and 21FLP4.

- **RCA-21AMP4A**—your "Universal" replacement for types 21ACP4, 21ACP4A, 21AMP4, 21AMP4A, 21AQP4, 21AQP4A, 21BSP4, and 21CUP4.

- **RCA-21ZP4B**—your "Universal" replacement for types 21ZP4, 21ZP4A, and 21ZP4B.

- **RCA-21YP4A**—your "Universal" replacement for types 21YP4, 21YP4A, and 21AFP4.

Note: While the four "Universal" Silverama types can replace the 33 industry types itemized above, these 33 industry types are not, in all cases, replacements for RCA's 21CBP4A, 21AMP4A, 21ZP4B, and 21YP4A.

CHART No. 8

H SYNC AT HORIZONTAL AFC

TROUBLESHOOTING with an OSCILLOSCOPE

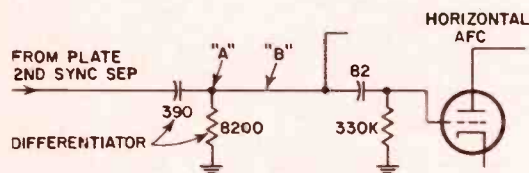
by John R. Meagher

RCA Electron Tube Division, Harrison, N. J.

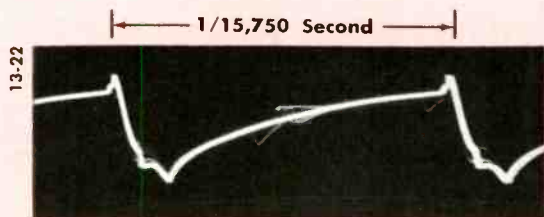
Important: Except as noted, all CRO photographs in this chart were taken at the grid of the horizontal AFC tube, with the same vertical gain, with adjustable bias voltage on the rf and if amplifiers, and using "external" sync.

When using a CRO to localize horizontal sync trouble, one of the first steps is to make the following checks at the grid of the AFC tube:

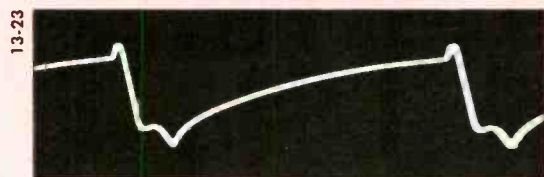
- (1.) Check waveform and amplitude as in 8A and 8B.
- (2.) Check the shape and relative amplitude of the sync pulses, as in 8D.
- (3.) Check for the unwanted presence of picture signals, using a vertical-rate sweep, as in 8I and 8J.



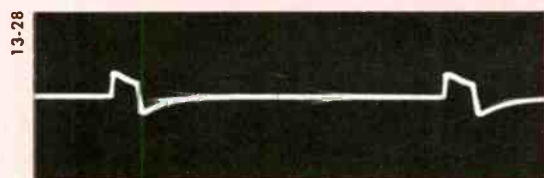
8F. Input portion of horizontal AFC circuit (RCA Syncroguide) used in obtaining the CRO photographs for this chart.



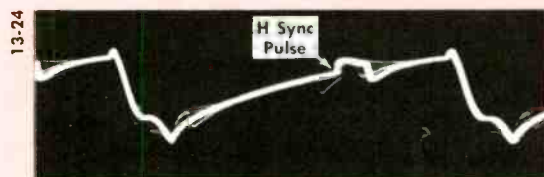
8A. Normal waveform, with receiver synced on a TV signal. The horizontal sync pulses are "hidden" in this pattern.



8B. Normal waveform, without a TV signal. A CRO sweep rate of 5,250 cycles was used for all photographs in this column.



8C. Waveform of horizontal sync pulses at point "A" in 8F. Lead "B" was disconnected and "internal" sync was used for this photograph.



8D. The sync pulses may easily be brought into view, as shown here, by adjusting the hold control so that the horizontal blanking bar appears in the TV picture (as a wide black vertical bar).



8E. The horizontal sync pulses move through the pattern, as indicated here, when the horizontal oscillator is out of sync.

← Normal Waveforms, With TV Signal

← Normal Waveforms, Without TV Signal

Horizontal Sync Pulses at "A"

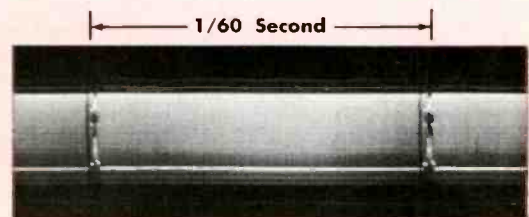
→ Abnormal, Due to Sync Compression

Held Out of Phase

→ Abnormal, Due to Sync Compression

Out of Horizontal Sync

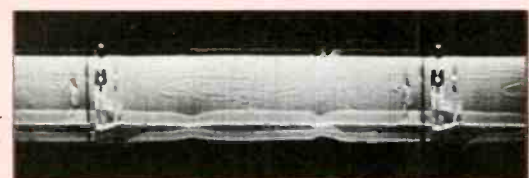
→ Images in Patterns



8G. Normal waveform, with receiver synced on a TV signal. The CRO sweep rate here, and in 8H, 8I, and 8J, is 20 cycles.



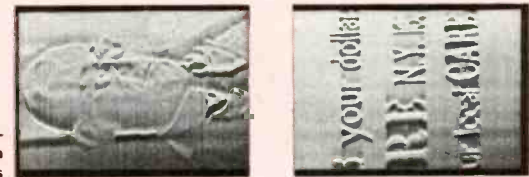
8H. Normal waveform, without a TV signal. (The two thin dark vertical lines in this and other photographs are made by two guide lines on the CRO screen.)



8I. If trouble, such as sync compression, allows picture signals to reach the AFC circuit, the pattern will be distorted, somewhat as shown here and in 8J, and the sync action is likely to be unstable.



8J. Another example of the condition shown in 8I. The picture signals may produce a vague image in the CRO pattern, as shown below in 8K.



8K. Two examples of images formed in CRO pattern under conditions shown in 8I and 8J. (V gain was increased, H gain was decreased, and a 60-cycle sweep rate was used for these "image" photographs.)

For Added Sales Achievements: RCA

Vast new marketing opportunities await the service-dealer who recognizes the tremendous profit potential in handling the recently introduced RCA Electron Tube Division line of "Special Products."

Distributors of this growing RCA family are now ready and eager to brief you on how you can increase your store's customer-appeal by taking on RCA's Citizens-Band communications receivers and accessories; wired- and wireless-intercom systems; and public-address equipment for business and social applications, including amplifiers, speakers, microphones, and other associated items.

High in quality and user demand, the diversified new line is comprised of three major product groupings. They contain an extensive array of already-popular products that cover a wide range of personal, business, industry, and social interests.

Two-Way Radios

The first group features the Mark VII Radio-Phone and the Personal-Com 300 (as well as numerous antennas, crystals, and accessories). They're for operation in the popular 27-Mc Citizens Band.

Providing the CB-station licensee with his own private two-way radio system, the dependable Mark VII offers short-range communications facilities at a relatively low cost. Can't you just picture its numerous uses in cars and trucks, on boats, on farms, at camps and lodges, in stores and shops, in industrial plants, and at home?

Attractively styled, ruggedly designed and functionally designed for ease of installation and operation, the Mark VII consists of a 5-watt, four-

channel, crystal-controlled transmitter, and a highly selective and sensitive superheterodyne receiver that is also crystal controlled for four channels. In addition, it incorporates a continuous-tuning feature that permits the operator to switch from the fixed channels and tune his receiver to any of the 23 channels within the Citizens band.

Other important attributes of the Mark VII: a full 2 watts audio output that can be heard above engine noise; a built-in squelch-control that quiets the receiver when it's not actually receiving a signal, and an automatic noise-limiter that reduces the effects of ignition and similar interference. Compact and lightweight, it weighs only 12½ pounds and measures 12-inches wide, 5½-inches high, and 8-inches deep.

The Personal-Com 300 is a hand-held, 90-milliwatt transceiver. Completely transistorized, this truly portable, truly practical two-way radio is designed so as to function on any one of 21 factory pre-set frequencies from 26.975 Mc to 27.225 Mc.

Here, indeed, is an easy-to-operate communications unit for business or personal use on construction sites, loading platforms, farms, camps, hunting lodges, and aboard "ship." It also can be used in combination with the Mark VII.

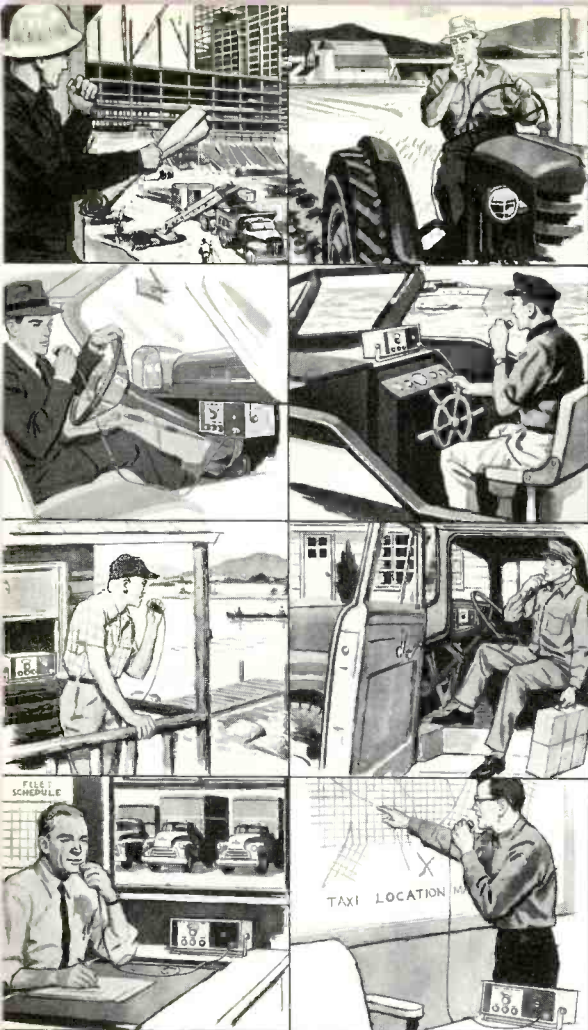
Fully self-contained, the handsome Personal-Com 300 is powered by a rechargeable battery, and is housed in a sturdy, high-impact-resistant Iplex plastic case.

Other features of this transceiver: a built-in telescoping antenna; a high-quality, 2-inch-diameter, 100-ohm speaker microphone for excellent voice reproduction; provision for use of an external earphone, and a superheterodyne receiver with tuned rf amplifier stage.

Small, compact, lightweight, the Personal-Com 300 is only 7¾-inches high, 2¾-inches wide, and 1¾-inches deep. It weighs just slightly more than one pound, including the battery.

Intercoms

Next group in the "Special Products" line consists of six economically-priced intercoms—each manufactured to RCA's traditionally high standards of engineering and design. For office, factory, farm or home use, they range from simple, wireless, two-way talk-listen systems to flexible, multi-station systems with a variety of talk-listen-monitor options.



Your RCA "Special Products" distributor now offers the Mark VII Radio-Phone (top) and the Personal-Com 300—two-way radio systems for business and personal use.



'Special Products'

Unsurpassed in styling, these fine intercoms harmonize beautifully with any decor. Installation, in all cases, is simple and inexpensive. Complete instructions are furnished with all units.

Ask your local distributor of RCA intercoms to show you: the "Switchboard Intercom," the "Intercom Standard Remote Station," the "Mastercom," the "Wireless Intercom," the "Transistorized Intercom," and the "Party-liner Intercom."

Public-Address Equipment

RCA's third "Special Products" group is devoted to public-address equipment, including the "Consul Series" of sound amplifiers and systems for industrial, commercial, and institutional use; the "Envoy Series" of multi-purpose, high-fidelity loudspeakers; and Models 508, 606, and 608 microphones for general industrial and commercial applications.

Providing exceptional flexibility and versatility in moderate priced P.A. sound equipment, RCA's three Consul amplifiers provide a choice of power ratings—12 watts from the Consul 12, 35 watts from the Consul 35, and 100 watts from the Consul 100. Each is designed to assure life-like reproduction from microphone, radio, record player, or tape input.

Custom engineered to work in perfect harmony with any of these three Consul amplifiers are the Consul Phonograph Top and the Consul Combination Mixer/Preamplifier.

Also offered are three panel covers, one for use with each of the three Consul amplifiers. A "must" to guard critical system balance and volume set-



RCA's public-address systems include sound amplifiers, loudspeakers, microphones, and other associated items for commercial, industrial, and institutional applications.

tings against accidents and tampering, these covers come complete with lock.

RCA's "Envoy Series" multi-purpose loudspeakers are offered in 8-inch, 12-inch, and 15-inch models for stereo or monophonic home music systems or for public-address applications.

Featuring a crisp, wide-range response, these speakers will please audiophiles who want realistic stereo or monophonic performance from hi-fi equipment—at a cost far less than they would have to pay for many competitive speakers of comparable high quality.

For P.A. applications, the Envoy Series loudspeakers deliver room-filling sound, faithfully reproduced from record, tape, or voice input. Their low silhouette frames permit installation in walls or ceilings, making the Envoy 8,

Envoy 12, and Envoy 15 ideal for building into new construction.

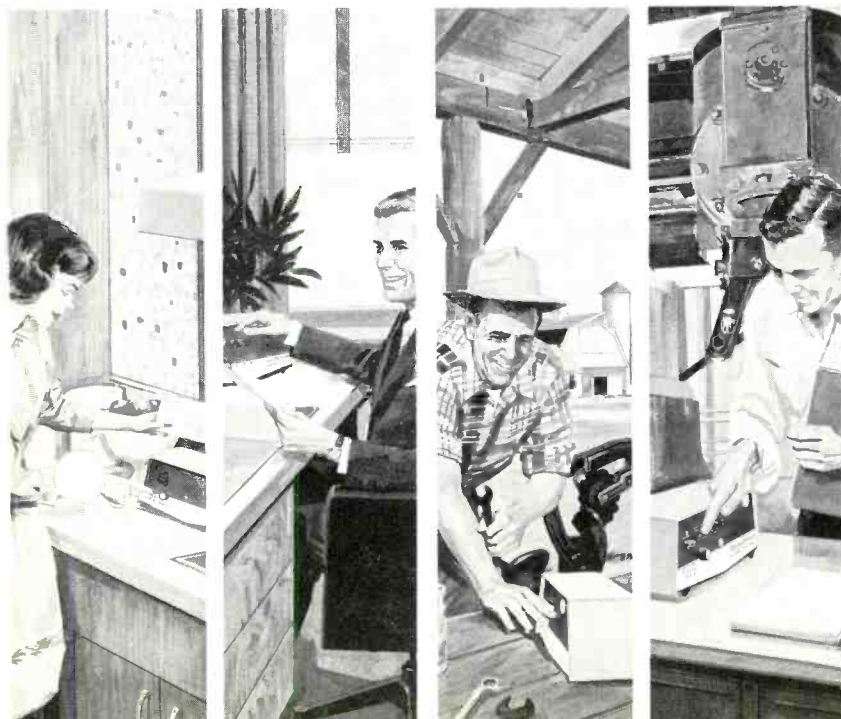
Outstanding features of these Envoy speakers:

- Dual-cone construction for maximum bass reproduction and efficient high-frequency response
- Edgewise-wound ribbon voice coil increases efficiency 18% over conventional coils
- Polyester-reinforced fiberglass coil-form maintains shape for life of speaker, minimizing the possibility of shorts and distortion-causing rubs
- Deep, medium-diameter voice coils to minimize non-linear operation
- Heavy-duty die-cast frames assure permanent centering of all elements
- Fungus-proofed cones and spiders prevent moisture absorption even in areas of high humidity

What about the RCA "mikes"? Models 508 and 606 are for use with public-address systems and home recording equipment, and for general-purpose applications; Model 608 is for fixed-base communications. All three types have excellent fidelity. Furthermore, their mechanical construction is inherently rugged, affording a high degree of protection from mechanical shock damage.

* * *

Further information about the advantages of RCA's "Special Products" will be brought to your attention in subsequent issues of RADIO AND TELEVISION SERVICE NEWS. The "plus" factors of this strong line also will be highlighted through national advertising in leading industrial, business, and electronic publications.



RCA intercoms can be employed in the home, the office, the farm, and the factory.



...SPRINGTIME IS VALU

Welcome the arrival of Spring—and RCA's new "Valuetime Program" through which you can obtain an exciting selection of valuable premiums free with your purchases of RCA entertainment receiving tubes from participating RCA distributors.

Chances are your local RCA distributor will be offering these premiums for

a limited time only; so you'd best ask him immediately how many tubes you need buy to earn any or all of the "Valuetime" items here-in pictured and described.

FOR STORE IDENTIFICATION, there are four new signs and a new decal—all created to call consumer attention to your services in main-

taining and repairing radios, TV receivers, and hi-fi sets with RCA tubes. The Metal Wall Sign (1A1276) is 40 inches by 28 inches; the double-faced Metal Outdoor Hanging Sign (1A1275) is also 40 inches by 28 inches; and the Metal Flange Sign (1A1277) is 18 inches by 12 inches. Two copies of the fourth new sign—a 40-inch by 14-inch unit for truck or wall, or wherever you want to sell yourself—are contained in the All-Purpose Panel Sign Kit (1A1278). The Decal for Wall, Window, or Truck (1A1279) is 12½ inches by 8½ inches.

Also available is RCA's Famous Valance Kit (1A1076), specially designed for do-it-yourself installation to dress up your storefront. This kit includes one store-identification panel (36 inches by 12 inches); four product panels (24 inches by 8 inches)—two on RCA electron tubes, one on RCA batteries, and one on RCA electronic parts; and two RCA monogram panels (9 inches by 9 inches). It also contains two background panels (24 inches by 8 inches), plus a squeegee that makes for easy dealer installation of these window valances



RCA Service-Special Tool Chest (1A1280)

that comprise a most effective means for permanent store identification.

SERVICE AIDS that can be provided to you:

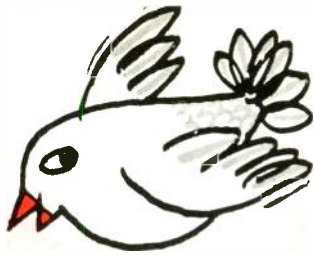
(1) RCA Service-Special Tool Chest (1A1280)—a new silent partner to take on calls or to have nearby when working in your shop. While compact in size, it has plenty of room to hold all necessary tools you need for your work. Two plastic trays fold up and out, so your complete tool kit is always within view and within reach. No fumbling around for that special wrench or screwdriver. And these two plastic trays can hold an ample supply of screws, resistors, capacitors, and other small service items needed for radio, TV, and hi-fi repairs.

Attractively designed of black and red leatherette, the same design found

New business-identifiers: top left, the Metal Wall Sign (1A1276); top right, the Metal Outdoor Hanging Sign (1A1275); bottom left, the All-Purpose Panel Sign—two to a kit (1A1278); bottom center, the Metal Flange Sign (1A1277); and bottom right, the Decal for Wall, Window, or Truck (1A1279).



Variety of Valuable Premiums Offered Free with Purchases

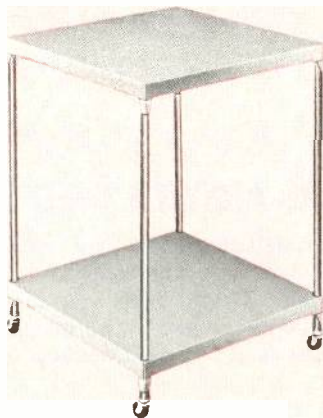


LET TIME!

on RCA's line of tube caddies, the Service-Special Tool Chest also features a special compartment to hold an RCA WV-38A Volt-Ohm-Milliammeter or a new RCA WV-120A Power Line Monitor.

(2) RCA WV-120A Power-Line Monitor (1A1281) —for use in keeping a constant check on line voltage. It offers new convenience, high accuracy, and faster servicing all at a glance. This new electronic instrument features an

expanded scale, fast meter action, wide frequency range, easy readability, con-



RCA TV-Toter Table (1A1043)

venient wall mounting. And, as noted above, the Power-Line Monitor fits into the specially designed compartment of RCA's Service-Special Tool Chest.

(3) RCA TV-Toter Table (1A1043) —a proved-popular service aid that measures 24 inches by 24 inches by 33 inches, just right to support a TV chassis at convenient bench length. With this table, you can roll a chassis, instead of lifting it. It also increases your working facilities and storage area. Two TV tables with a board stretched across can be used as a fixed bench. Three tables offer a three-section bench with roll-out center. The TV-Toter Table comes complete with rubber mat.

(4) Plier Set by Kraeuter (1A1282) —including one extra-long chain-nose pliers, one long chain needle-nose pliers with cutters, and one diagonal "oblique" cutting pliers. Tested for perfect balance, these high-quality professional tools are made of fine grain steel, with cushion-grip handles for added utility.

FOR HOME ENJOYMENT, RCA's "Valuetime Program" highlights a Scotch Grill (1A1285) and outdoor furniture by Hampden—a chaise lounge (1A1284) and a chair (1A1283).

The Scotch Grill is the best looking one of its kind on the market. Measuring 11½ inches in diameter by 11 inches high, it's just right for picnic or patio, or for use indoors in a fireplace. Features of this unit include air-cooled walls and a burn-proof firepot. Draft holes in exterior wall and bottom of firepot assure quick lighting and steady, economical heat.

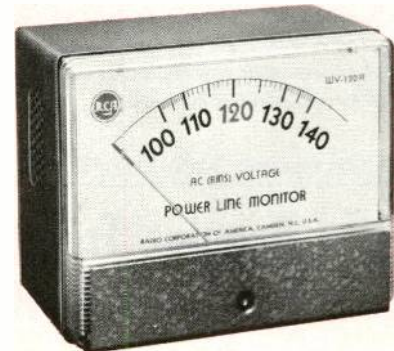
Available with green-and-white or yellow-and-white webbing, the Hampden chaise lounge and chair are cool, airy furniture pieces, carefully built for lasting comfort. Their sturdy frames consist of tubular aluminum with spun ends. Inverted base bars prevent wobbling caused by uneven ground.



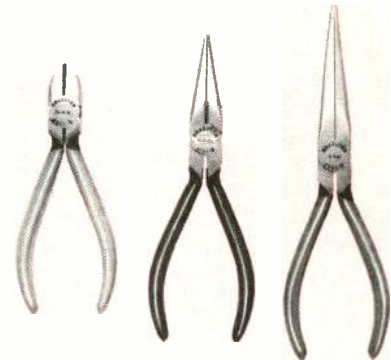
Outdoor furniture: chair (1A1283) and chaise lounge (1A1284), both by Hampden.



RCA's do-it-yourself Valance Kit (1A1076) contains the panels illustrated here, as well as another RCA monogram panel, two background panels, and a handy squeegee.

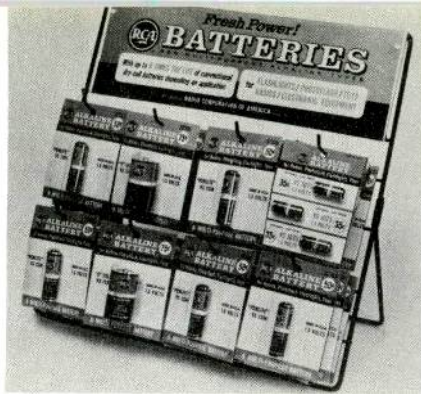


RCA WV-120A Power-Line Monitor (1A1281)



Plier Set by Kraeuter (1A1282)

ns for Home and Business
s of RCA Receiving Tubes



At right: A quantity-assortment of blister-packed RCA transistor-radio batteries featured in the "Profit-Pak #1" display unit—measuring 17½ inches wide, 22 inches high, and 9½ inches deep. Shown above is the "Profit-Pak #2" display—13 inches wide, 12½ inches high, and 5¾ inches deep. It's tailor-made for presentation of a quantity-assortment of three blister-packed RCA multi-purpose alkaline batteries.



Versatile Battery

Springtime, 1962, should long be remembered in the annals of successful radio-battery merchandising. For never before has the RCA battery dealer been presented with so many outstanding opportunities for expanding his sales and profits during a year's peak battery-selling season.

Consider the booming transistor-radio market, the ever-growing number of battery-operated toys, the welcome addition of RCA photoflash batteries, and the dynamic advantages of RCA's new blister packs. They're all "plus"-factors for the RCA battery dealer who campaigns for his rightful share of the industry's increased business potential.

To help you in your all-out drive for maximum battery-sales results, your RCA distributor now offers the 1962 RCA Battery Spring Program—headlining an impressive array of new promotional items and merchandising aids.

Topping the list is the versatile RCA

To Increase Self-Service Sales Appeal:

Eight Popular Transistor-Radio Batteries Now Available in Handy Blister Packages

Here's an announcement that should please every battery dealer who's anxious to achieve maximum sales results with a minimum of selling effort:

RCA's eight fastest-moving transistor-radio battery types are now blister-packed for increased self-service sales appeal. Also available in blister packs are the three multi-purpose types in the new RCA line of alkaline batteries.

A self-contained unit with its own merchandising message, each blister-packed battery makes it easier than ever for you to capture your share of today's soaring market for portable power. And with your resultant increase in battery-turnover speed, you also gain more time at the counter for other sales efforts.

Prominently displaying product, the clear-plastic "blisters" are mounted on attention-getting cards of pilfer-proof size. These cards feature battery-type numbers, optional list prices, and other pertinent information such as typical applications and listings of competitive types with which the RCA batteries are interchangeable. RCA blister-pack types are available in conventional standard packs and in two pre-packaged assortments.

To help you introduce the blister-packed batteries to your customers, your RCA distributor is now prepared to provide you with the two special "Profit Pak" assortments. The quantities of each battery type in these Profit Paks have been carefully selected on the basis of national movement.

Profit-Pak #1 contains a quantity of

eight popular types covering over 90% of all transistor-radio applications. The mercury battery assortment consists of two VS149's, two VS164's, two VS312's, and eight VS313's. Also included are four VS300A, 12 VS323, and 12 VS334 zinc-carbon batteries, and two VS1149 alkaline cells.

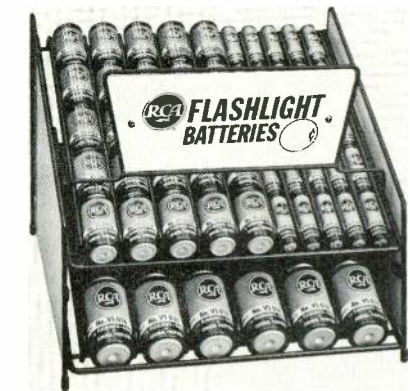
Profit-Pak #2 contains a quantity of three alkaline types that cover a wide range of applications in toys, photoflash equipment, portable radios, and emergency lighting. There are 24 VS1334's, six VS1335's, and nine VS1073's.

List prices (optional) of Profit-Paks #1 and #2 are \$32.24 and \$19.65, respectively. Included with each Profit Pak is a complete wire-rack display for your counter or peg-board use.

'ALL-AMERICAN 8' TRANSISTORS ANSWER NEED FOR DIRECT

Your RCA distributor can now provide you with low-cost, display-package assortments of the eight fast-moving, high-demand transistor types in RCA's "All-American 8" line. You can rely on these popular types to meet direct-replacement requirements of over 80 makes and 450 models of portable and table radio receivers, as well as tape recorders and other portable instruments.

RCA's "All-American" transistors are the same as those original-equipment types which this major supplier offers to U. S. radio manufacturers for fac-

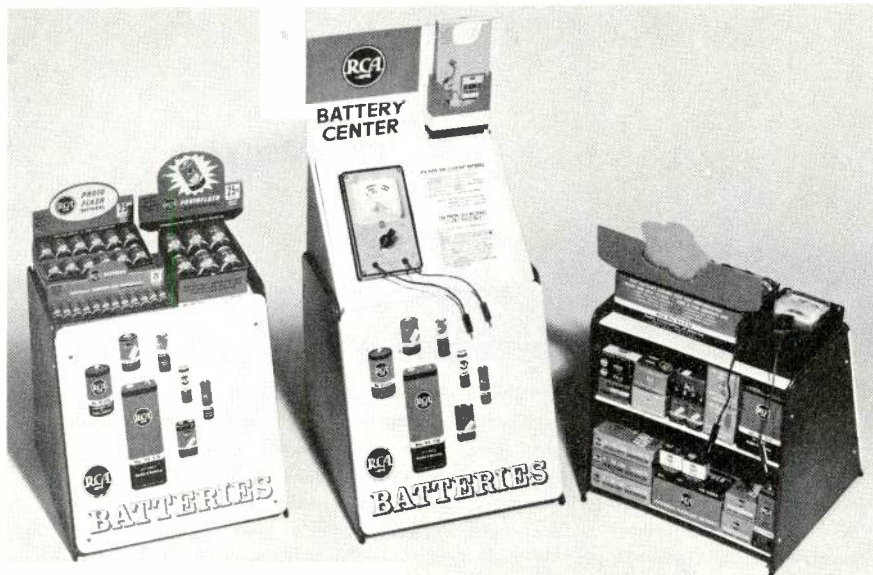


Flashlight Battery Counter Merchandiser (1P1095)

tory installations. So why substitute when you can obtain RCA factory originals? They'll help you to make your replacements without circuit changes and time-consuming guesswork.

As illustrated at right, the attractive "All-American 8" product-display card features the eight types as an assortment of 12 transistors individually and conveniently blister-packed. There's one each of transistor types 2N405, 2N406, 2N411, and 2N412; two each of transistor types 2N407, 2N408, 2N409, and 2N410. (Quantities per

Center Highlights New Dealer Promotion Program



On only one square foot of your counter, set an RCA Battery Tester Display (1P1093) on an RCA Counter Merchandiser (1P1094) and you have an appealing RCA Battery Center—an inviting combination to draw increased impulse sales. The Counter Merchandiser (as shown at left) can also be used as a stand for self-displays of RCA photoflash batteries or, if you prefer, RCA flashlight batteries. Rear view of a Counter Merchandiser (at right) pictures its handiness as a storage unit.

Battery Center, your combination of the RCA Battery Tester Display (1P1093) and Counter Merchandiser (1P1094). These two units are tailor-made to fit hand-in-glove, ready for setting up on only one square foot of your counter space.

Created to prompt impulse buying, the Battery Tester Display is compactly designed around its center of attraction: a quality tester that's sturdily built and brush-chrome finished for day-after-day customer use. Eleven testing positions cover a range of radio types from 1.5-volt to 90-volts. An extra 1.5-volt position is provided for testing the popular photoflash cells.

Simple battery-testing instructions are printed right on the display, which also includes a supply of folders for customer handout. Note: Holes in the top of the Counter Merchandiser (which is described below) permit you to secure your battery tester directly to the Merchandiser.

(For additional quantities of the new consumer folder, ask your RCA distributor for the 1P1097. In simple terms, it explains the distinct advantages of each of the three battery systems in the RCA line: zinc-carbon, mercury, and the new alkalines. The back page has space for your rubber-stamp imprint.)

What about the RCA Counter Merchandiser? It should prove *another* dealer favorite. Occupying only a square foot of your counter, it will provide you with pilfer-proof accommodation for storing a dozen or more two-unit packs of popular RCA radio-battery types. This merchandiser is sturdily and sensibly constructed so as to continue to present a sales-stimulating appearance to your customers (*never* that disheveled look of conventional see-through merchandisers). Front panel and shelving are of quality steel; durable masonite side panels have an attractive walnut finish.

While it is recommended that dealers employ the new Counter Merchandiser as a base for the Battery Tester Display to create an RCA Battery Center, the Counter Merchandiser can also be used with shelf-displays to further spark customer interest in RCA flashlight or photoflash batteries.

Other dealer items available to you as part of the current RCA battery campaign:



RCA Battery Dealer "Essentials" Kit (1P1099)

- 1962 RCA Battery Dealer "Essentials" Kit (1P1099). Here in one convenient package is a combination of handy battery reference material and colorful in-store promotion items. The kit contains an RCA Battery Wall Identifier Chart: a long-lasting front-door or window decal; two handy shirt-pocket size RCA battery interchangeability guides; two colorful window streamers; and a battery price sheet listing optional retail prices.

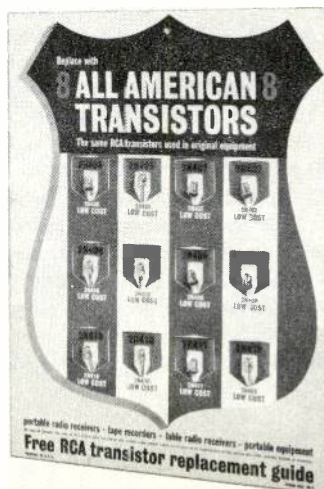
- Flashlight Battery Counter Merchandiser (1P1095). Bringing added impulse-purchasing appeal to RCA's fast-moving flashlight batteries, this stylish 10-inch wide by 10-inch deep merchandiser is planned for self-service display of two dozen "D", "C", and "AA" flashlight cells in little more than ½ square foot of counter space. Note, too, its sturdy metal construction, rubber-tipped legs, and non-tilt design.

(Continued on next page)

REPLACEMENTS IN SOME 80 MAKES AND 450 MODELS

type are based on typical transistor complements.)

When you order an "All-American 8" package from your distributor, not only will you receive the product merchandiser complete with the 12 blister-packed transistors, but you'll also receive a copy of the new "RCA Transistor Replacement Guide" (1L-1051). It will advise you which RCA transistor types to use as replacements in specific makes and models of portable radios, table radios, tape recorders, and portable equipment.



Battery Promotion

(Continued from preceding page)

- **Battery-Operated Motion Window Display (1P1100).** A novel show piece for your store window, this 16-inch wide by 26-inch high unit is a real attention-getter. The flip-flop motion of its revolving center disc will draw your customers' interest to the reminder that they can rely on the portable power of RCA batteries.

Two RCA VSO36 batteries are included with this display. They will operate the revolving center disc full-time for from two to three weeks. A suggestion: Remove the battery pack at night and double the service life of these batteries.

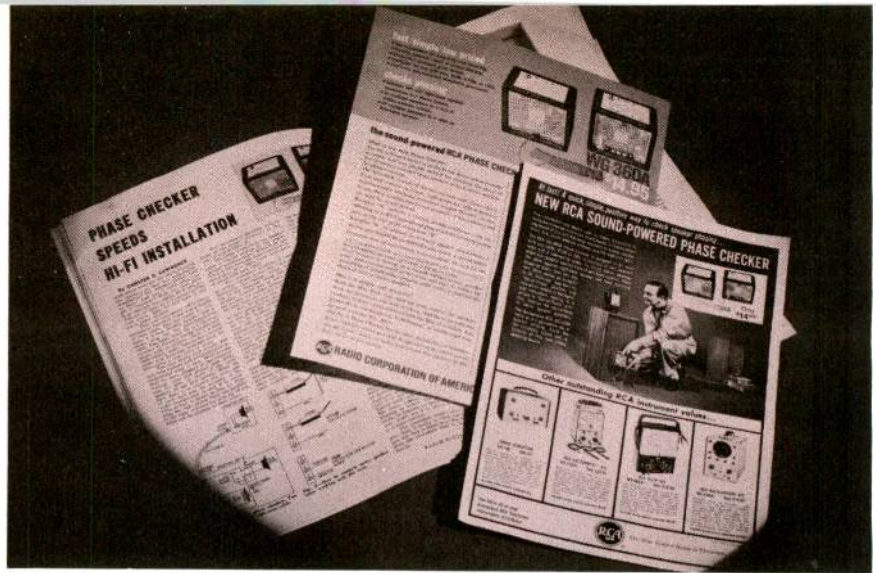
- **Giveaway Litterbags (1P1098),** complete with handy dispenser for wall or counter use. Needed additions to every automobile, these practical Litterbags certainly will be appreciated by every car owner to whom you present them. You will be rewarded by increased customer goodwill and bonus sales of RCA batteries.

Highlighting the message, "Travel Light . . . Travel Right with RCA Batteries," and including a large area for rubber stamping your imprint, every Litterbag becomes an advertisement for your store.

* * *

For a first-hand view and review of these valuable selling tools, visit your local RCA battery distributor without undue delay. He'll be only too glad to explain to you how easily you can acquire all of the active ingredients of the business-building RCA Spring Battery Program.

Battery-Operated Motion Window Display (1P1100)



RCA'S WG-360A PHASE CHECKER CONTINUES TO GROW IN POPULARITY—and for good reason: With it, you can quickly, easily, and reliably check the phasing of low-frequency and mid-range loudspeakers in two-speaker radios and television receivers, stereophonic phonographs and tape players, and public-address installations. If you don't already own this versatile test instrument—and would like further convincing on its advantages to you in audio maintenance, then review one or all of the following: (left to right) the special article appearing on page 78 of the January, 1962, issue of *RADIO ELECTRONICS*; the "WG-360A RCA Phase Checker Flyer" (1Q1067), obtainable at your RCA distributor's; and the full-page RCA WG-360A ad appearing in *ELECTRONIC TECHNICIAN*, *HI-FI/STEREO REVIEW*, and *AUDIO* magazines.

Socket Replacement Hint

by Anthony Troiano*

Replacing a tube socket in a wired chassis can be a tedious and time-consuming task—especially when you have to unwrap or cut the leads, strip the insulation from the cut leads, and reconnect and solder the leads to the proper lugs of the new socket.

Want to simplify and quicken this job? Here's my recommendation:

With a diagonal cutter, clip off each of the lugs as close to the socket as possible. Because the clipped lugs are held in place by the wires and components, they will stay in place around the socket. If there is only one thin-stranded wire connected to a socket lug, the lug may move out of position.

*Industrial Applications, RCA Semiconductor and Materials Division, Somerville, N. J.

This situation is rare, however, and is not a problem because you can easily remember the pin number to which the wire must be connected.

Next, remove the defective socket. Then place and fasten the new socket in the same position.

Last step: Place the lugs held by the connecting wires over or against the lugs of the new socket and solder the two together.

This method is fast and neat. At the same time, it helps to avoid wrong connections or breaking of leads. It will be especially appreciated when the leads to the socket are just barely long enough and the wires are tightly wrapped around the lugs of the socket.

'COLOR' BOOM PROMPTS RCA TO EXPAND PICTURE-TUBE

RCA plans a \$1.5 million expansion of its color-TV picture-tube manufacturing facilities to meet an anticipated 250% increase in industry demand this year. The expansion will take place at its \$10 million color tube plant at Lancaster, Pa., where color picture-tube production has been running at record rates during the past year, according to D. Y. Smith, Vice-President and General Manager of the RCA Electron Tube Division.

"Since nearly every major TV manu-

facturer is now marketing color sets, we want to be prepared to supply high-quality color picture tubes to the industry," Mr. Smith stated. The additional facilities at the Lancaster plant will be in full operation during the second half of 1962.

"Within the last year," he said, "RCA has more than doubled its color tube output as color set sales have continued to climb. By making this new investment in our Lancaster plant, RCA once again is renewing its confi-

What's New IN RCA TUBES

With this issue, RADIO AND TELEVISION SERVICE NEWS inaugurates a new column. Its foremost purpose is to acquaint service-dealers and technicians with new tube offerings by RCA distributors.

Twenty new additions to RCA's replacement line of entertainment receiving tubes are now available. Here's a brief run-down:

2AF4B—a medium-mu triode of the 7-pin miniature type. A direct replacement for the 2AF4A, it is designed as a local oscillator in series-string UHF-TV receivers. Heater: 2.35 volts, 0.6 ampere.

2GK5 and **3GK5**—high mu triodes of the 7-pin miniature type. Each is for use as a VHF rf amplifier in series-string TV receivers. The 2GK5 has a 2.3-volt/0.6-ampere heater, while the 3GK5 has a 2.8-volt/0.45-ampere heater.

3GS8/3BU8—a twin pentode of the 9-pin miniature type, with common No. 2 grid, No. 1 grid, and cathode. It is for use as a combined sync-separator, sync-clipper, and automatic-gain-control tube in series-string TV receivers. Heater: 3.15 volts, 0.6 ampere.

6AL3—a half-wave vacuum rectifier of the 9-pin miniature type. It is for use as a TV damper diode. Heater: 6.3 volts, 1.55 amperes.

6AY3—a half-wave vacuum rectifier of the novar type. It is for use as a damper diode in horizontal-deflection circuits of black-and-white TV receivers. Heater: 6.3 volts, 1.2 amperes.

6CQ4—a half-wave vacuum rectifier with an octal base and a T9 bulb. It is for use as a TV damper diode. Heater: 6.3 volts, 1.6 amperes.

6DC8—a double-diode—remote-cut-off pentode of the 9-pin miniature type. It is for use as a combined if-amplifier, AM-detector, and automatic-volume-control tube in AM-broadcast receivers. Heater: 6.3 volts, 0.3 ampere.

6EH7—a semiremote-cutoff pentode of the 9-pin miniature type. It is for use as an if amplifier in TV receivers. Heater: 6.3 volts, 0.3 ampere.

6EJ7—a sharp-cutoff pentode of the 9-pin miniature type. It is for use as an if amplifier in TV receivers. Heater: 6.3 volts, 0.3 ampere.

6FG7—a medium-mu triode—sharp-cutoff pentode of the 9-pin miniature type. It is for use as a triode oscillator and pentode mixer in VHF-TV receivers. Heater: 6.3 volts, 0.45 ampere.

6FS5—a beam power tube of the 7-pin miniature type. It is for use as a VHF rf amplifier in TV receivers. Heater: 8.3 volts, 0.2 ampere.

6GT5—a beam power tube of the novar type. It is for use as a horizontal-deflection amplifier in TV receivers. Heater: 6.3 volts, 1.2 amperes.

6HJ8—a diode-sharp-cutoff pentode of the 9-pin miniature type. It is for use as a video detector and if amplifier in series-string TV receivers. Heater: 6.3 volts, 0.45 ampere.

6K11—a medium-mu triode—high-mu twin triode of the 12-pin type with a T9 bulb. It is for use as an AGC-sync-noise inverter in series-string TV receivers. Heater: 6.3 volts, 0.6 ampere.

12AZ7A—a high-mu twin triode of the 9-pin miniature type. A direct replacement for the 12AZ7, it is for use in color-demodulator, audio-amplifier, frequency-converter, and direct-coupled cathode-drive rf amplifier circuits in VHF-TV receivers. Heater: 12.6 volts, 0.225 ampere, or 6.3 volts, 0.45 ampere.

13FD7—a dual triode with a 9-pin miniature base and a T9 bulb. It is for use as a vertical oscillator—vertical

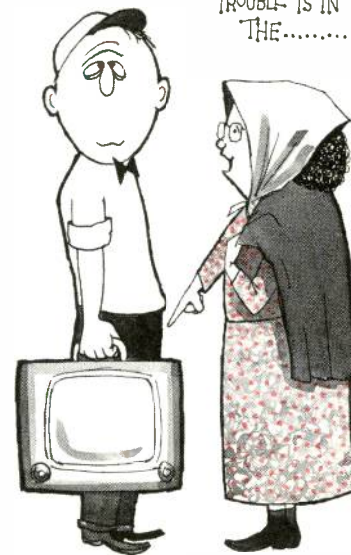
amplifier in series-string TV receivers. Heater: 13 volts, 0.45 ampere.

17AY3—a half-wave vacuum rectifier of the novar type. It is designed for use as a damper diode in horizontal-deflection circuits of black-and-white series-string TV receivers. Heater: 16.8 volts, 0.45 ampere.

7408—a beam power tube with an octal base and a T9 bulb. It is for use as an audio power amplifier in high-quality sound systems. Heater: 6.3 volts, 0.45 ampere.

7591—another beam power tube that has an octal base and a T9 bulb. With a 6.3 volt/0.8-ampere heater, it is for use as an audio power amplifier.

I THINK YOU SHOULD CHECK THE **RF-IF** ALIGNMENT AND RUN A **SCOPE CHECK** ON THE **HORIZONTAL OUTPUT**. I'VE STUDIED THE **SCHEMATIC** AND IT'S POSSIBLE THE TROUBLE IS IN THE.....



A serious business, the installation, repair, and maintenance of radio, TV, and hi-fi sets. But what good is it all when you can't take time out once in a while for a good hearty laugh—or even a slight chuckle—at the work-a-day problems that confront service-dealer, distributor, and manufacturer alike? Hence, the launching in this issue of a new series of cartoon features, presented to put that extra smile in your daily routine.

MANUFACTURING FACILITIES AT LANCASTER, PA., PLANT

dence in the present shadow mask color tube. This tube is the heart of every color-TV receiver on the market today.”

RCA, Mr. Smith stated, must make plant additions of the scope just authorized if it is to meet the expanding picture-tube requirements of color TV which is expected to reach the status of a \$200 million industry this year—a doubling of volume in just two years.

The RCA executive said the upward trend in color-tube demand stems from the growing public acceptance of color

TV, the entry of other manufacturers into the field, the vastly increased color-TV program schedules, and the excellent performance of sets equipped with RCA's 50% brighter color tube.

The \$1.5 million will be spent on additional manufacturing equipment required to handle larger volumes of color tubes. In addition, RCA plans to streamline certain assembly and processing operations to make possible a substantially higher daily unit production rate.

Electronics Servicing is Big Business

by R. B. Sampson

Manager, Market Research
RCA Electron Tube Division

Most of us by this time are conditioned to the probability that the world of tomorrow will be one in which electronics will play the leading role. There is no need to recount here the steady extension of electronics into seemingly every field of human endeavor. We are familiar with much of this through actual first-hand experience, combined with what we have learned through continuous addiction to and absorption with the electronics world.

It is unlikely, however, that any of us are prepared for the recent suggestion of a California physician that the human heart, being nothing but an uncomplicated pump, could eventually be replaced by machinery designed by electronics engineers. Your reaction to this suggestion, or the plausibility that may be given to it, does not concern us here. The point is that electronics has caught the fancy of the scientific, professional, military, and business world, and its horizons are beyond our capacity to imagine at this point of time.

It is, for us, a matter of far greater importance as to how we can personally benefit from the continuous advance of electronics as a business. For some, it simply may be a matter of recognition and position within an electronics organization. For others, as in the electronics service-dealer industry,

it is a problem of maintaining a profitable business so as to reap the rewards of the present and the expectations of the future.

As a constant reader of virtually all the service-dealer association bulletins originating throughout the country, one must not only be cognizant of the problems facing the service industry, but impressed by the considerable efforts of the editors and contributors to advance them. These problems are real, and they are rightfully the concern not only of those in the service industry, but also of those who have an equally large stake in this important channel of distribution.

'Accentuate the Positives'

Without any attempt to minimize the problems of the electronics servicing industry, it is well to recall that no segment of our growing electronics industry, nor any other industry for that matter, is entirely devoid of problem areas.

Nor can we expect at any time to be free from adverse situations emanating from within or outside the industry. This is a condition imposed on us by our free enterprise system, and it is one for which we gladly reject a well-known alternative.



R. B. Sampson

Again, without minimizing the negatives confronting the electronics service-dealer, it is well to accentuate the positives which prevail within the industry. Many of these can be more easily resolved than those on the other side of the coin. The future growth of the electronics industry is a case in point.

The extension of electronic applications into countless new lines of endeavor offer new opportunities for dealers who are prepared to take advantage of this development. The already extensive use of electronic equipment in the home and in neighborhood business is another. The probability of increased growth in this field likewise offers great opportunity for the electronics service-dealer.

Neither can we overlook the more than 56-million television sets currently in use, nor the larger number of radios and phonographs which must be maintained in working order. Color television now offers tremendous promise for the service-dealer, as do the many other electronic equipments in the home and in commercial establishments.

Thus, the electronics service industry has a large base on which to continue a multimillion-dollar business, as well as one on which to build for the future. Neither will be completely free from frustrating problems and adverse conditions. But, the knowledge of this fact should not prevent the enterprising service-dealer from moving ahead

Designed to Avoid Costly Call-Backs: RCA-21FDP4 Is Recommended

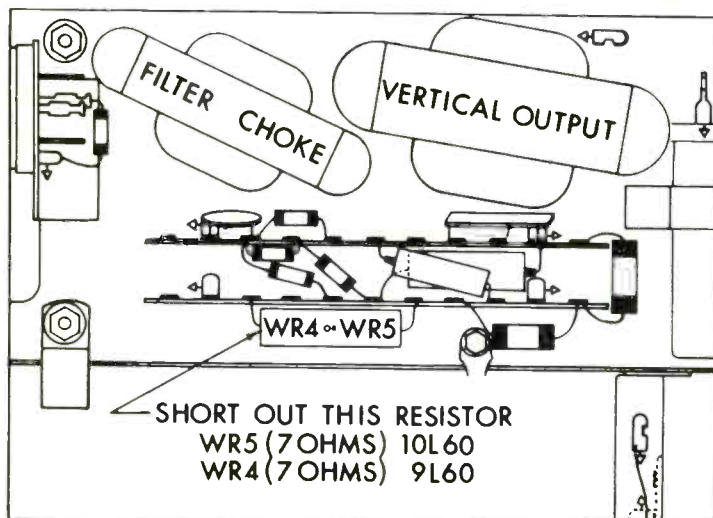


Figure 1

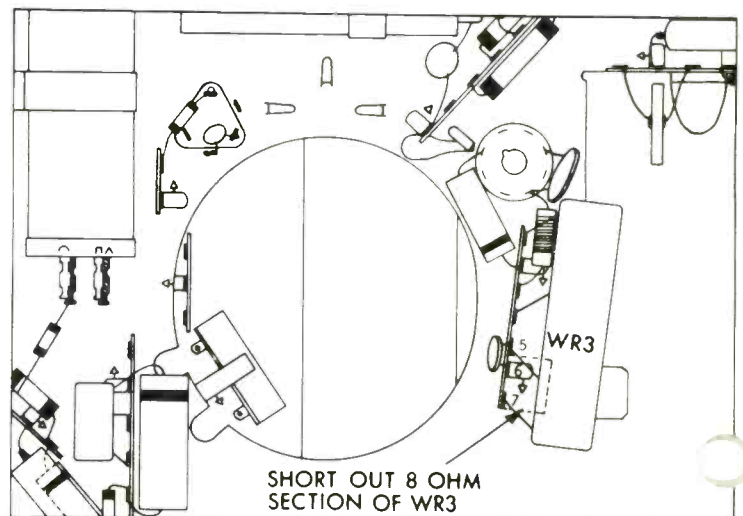


Figure 2

on the strength of his identity as a local concern. He should continue to maintain and improve his position in the community by meeting the repair and maintenance requirements of countless electronic equipment devices within his immediate neighborhood.

In essence, the service industry is comprised of thousands of firms serving a local need. They are, in fact, the final link in the distribution chain from manufacturer to user. It is important that this function be recognized for its contribution to the whole. But, it is equally important for the individual servicing firm to become completely and professionally identified in his neighborhood as a competent member of a great industry.

Do you own an RCA WV-37B Radio Battery Tester? Or are you planning to buy one in the near future? You can increase the usefulness of this deluxe instrument by using the tester selector settings as indicated on the revised "RCA WV-37B Radio Battery Tester Chart for Portable - Radio Batteries" (EI-107). Obtain your copy from your local RCA distributor. This chart includes the latest data available for testing portable-radio batteries with the WV-37B.



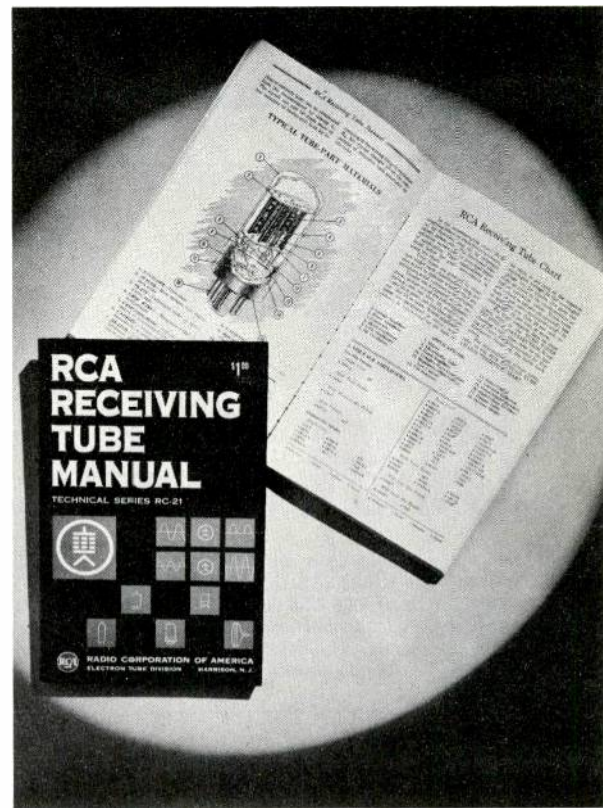
NEW RECEIVING TUBE MANUAL

Looking for tube data? You'd do well to check the new 480-page RCA Receiving Tube Manual—a "best seller" that truly merits its acclaim as the most complete and authoritative reference in the field.

Ask your RCA distributor to show you a copy of the recently issued RC-21. Latest in a series whose combined circulation is pushing the four-million mark, this edition contains up-to-date technical information on more than 900 receiving tubes, including nuvistor, novar, and other new tube types. It also features data on over 100 types of black-and-white and color picture tubes.

Note that the Manual's text material on electron tube theory, installation, application, and interpretation of tube data has been revised and enlarged. In addition, there's a new receiving tube chart that will aid you in the selection of tube types for specific applications. The picture tube characteristics chart is also completely new, and both charts have been designed to make them easier to read and more convenient to use.

The popular circuits section has been expanded to include 26 circuits. This section highlights several broadcast receivers; a 144-Mc receiver and a 10-meter nuvistor preamplifier for amateur radio applications; two 2-channel stereo amplifiers; five amplifier circuits, several using novar types; preamplifier, mixer, and tone-control circuits; a code-practice oscillator; an



intercom set; and an electronic volt-ohm meter.

Optional selling price of the Receiving Tube Manual? It's the same as last year's: only \$1.00 per copy—despite its 12% increase in subject matter. Chances are you'll want *your* RC-21 as soon as possible.

as Replacement for Picture-Tube Type 21EAP4 in 10 Philco Models

Service technicians are advised to turn to the RCA-21FDP4 as a replacement for picture-tube type 21EAP4 in Philco models 9L37, 9L37U, 9L38, 9L38A, 9L38U, 9L38AU, 9L60, 9L60U, 10L60, and 10L60U.

Featuring vastly improved design characteristics and the latest innovations in CRT manufacturing quality, RCA's 21FDP4 is service-designed to eliminate costly call-backs and tube replacements during in-warranty periods. This new Silverama® type is produced with an all-new electron gun, the finest parts and materials, and a high-quality envelope that has been thoroughly inspected, cleaned, and rescreened prior to reuse.

While both tubes have 600-milliampere heaters, the 21FDP4 has a

substantially higher heater voltage than the 21EAP4 (6.3 volts instead of 2.35 volts). Hence, minor heater circuits modifications are required. To obtain optimum focus, you may also have to adjust the focus tap.

Here's all you need do before you install a 21FDP4 in place of a 21EAP4:

As shown in Figure 1, short out the filament dropping resistor in the conventional (parallel) wired Philco chassis 9L60, 9L60U, 10L60, and 10L60U.

As shown in Figure 2, when RCA's new tube is used as a replacement in chassis having series-string heater circuits (Philco 9L37, 9L37U, 9L38, 9L38A, 9L38U, and 9L38AU), short out the 8-ohm section of WR-3 to correct for the higher voltage of the 21FDP4.

While you may wish to clip this article as a reminder to keep an RCA-21FDP4 in stock, you won't have to remember to bring this service note with you on your home call. Full instructions and diagrams on circuit modifications are included with every 21FDP4 you purchase from your RCA distributor.

* * *

With each RCA-21FDP4, you will also receive a conversion label. Affix this label near the serial number and tube layout diagram of your customer's set to advise the next technician who services this set that you have performed the necessary receiver-filament-circuit modifications prior to your installation of a 21FDP4 as a replacement for type 21EAP4.



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FOR DETAILS, SEE PAGE 8.

