RADIO AND TELEVISION

Service News

A PUBLICATION OF THE RCA TUBE DEPARTMENT

RCA SERVI-CHEST
(See Pg. 2)

JULY - AUGUST
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RCA Servi-Chest . . . A Carry-All Case for the Busy TV Serviceman

The RCA SERVI-CHEST shown on the front cover of this issue of RADIO AND TELEVISION SERVICE NEWS is RCA's latest prize in its package of outstanding servicing aids.

Under RCA's fabulous Servi-Chest promotion, recently launched by your RCA Tube Distributor and now in full swing, your regular purchases of RCA receiving tubes and kinescopes bring you this sensational carry-all case at no extra cost! For the duration of the Servi-Chest program, you will receive an RCA silver token with each RCA kinescope or 25 RCA receiving tubes purchased. The RCA Servi-Chest is yours for only 30 RCA tokens.

Size of the Servi-Chest is 13¼ inches high by 9 inches deep by 18¼ inches wide. The large drawer across the top measures 14½ by 3 inches by 7 inches deep. It is intended for tools, probes and cables, flashlight, etc. The three drawers to the right of the VoltOhmyst are each 5½ inches wide and 7 inches deep. The two upper drawers, measuring 1½ inches high, are ideal for resistors, capacitors, fuses, pilot lamps, etc. Large components such as focus coils, deflecting yokes, horizontal - deflection - output and high-voltage transformers (or perhaps some tubes) can be carried in the lower drawer which is 4½ inches high.

Measuring 6¼ by 8¼ by 7 inches, the center compartment is designed to accommodate the popular RCA VoltOhmyst.* A retaining bar is provided to hold the instrument securely in position.

In addition, the Servi-Chest has a soldering-gun compartment, and two utility compartments which are suitable for a roll-up tool kit, drop cloth, kinescope-carton carrying strap, transmission line, etc.

An 11 by 16-inch service mirror of top quality is mounted inside the Servi-Chest removable cover. With this giant mirror and the angle wedges provided (for adjustment of the mirror angle) it's a cinch to set those factory-adjustment controls on the rear of the chassis.

Bonus of Valuable Publications Included!

Another feature of this serviceman's dream chest is a portfolio of the following valuable RCA publications: "TV Servicing" (TVS-1030), "TV Servicing Supplement I" (TVS-1031), "RCA Receiving Tubes" (1275-F), "This Business of Radio and TV Servicing" (2F770), "Service Parts Directory for RCA Victor Radios" (SP-1008), "RCA Kinescopes" (KB-1022), and "RCA TV Replacement Guide" (SP-1006-B).

The Servi-Chest has a sturdy wooden frame employing dove-tail construction. It is covered with top-grade leatherette, and provided with metal corner braces and a grip-easy handle.

Every serviceman should have a Servi-Chest. It is designed to help the busy serviceman do a better job in less time. It adds that "professional" touch which will help build your reputation! The RCA Servi-Chest can only be obtained through your RCA Tube Distributor. It is not for sale at any price. When you have collected 30 RCA tokens, present them to your RCA Distributor and receive, without cost, the complete RCA Servi-Chest.

Remember, your regular purchases of RCA receiving tubes and kinescopes can bring you the new RCA Servi-Chest at no extra cost! Ask your RCA Distributor for a copy of the Servi-Chest Flyer (Form 3F145). It contains a complete description of the Servi-Chest as well as details on how the famous RCA "Treasure Chest" (well-known companion piece to the RCA Servi-Chest), RCA Drop Cloth, and RCA Kinescope Carton Carrying Strap, can be obtained for RCA tokens.

*TMK®

Errata

("Guide for Using the RCA 231T1," Jan.-March, 1953 issue of RADIO & TELEVISION SERVICE NEWS, pg. 5, col. 1) *Note 4.* R_2 is incorrect; this resistor should be labeled R_1.

NEW PROBE FOR VOLTOHMYSTS

This new WG-222 DC/Direct Probe may be slipped onto the end of either the WG-218 or WG-220 Direct Probe for ac and dc voltage measurements, and resistance measurements with RCA VoltOhmysts. The probe contains a switch which shorts out the probe's one-megohm isolating resistor. It is unnecessary to remove the probe, as in the case of the WG-217, for ac and resistance measurements. This feature permits more efficient servicing and minimizes the probability of a misplaced dc probe.

RADIO AND TELEVISION
Service News
A PUBLICATION OF THE RCA TUBE DEPARTMENT

RCA Radio & Television Service News is published in the interest of servicemen and service dealers. It is written to assist the serviceman in providing better service, and to foster the growth of his business by supplying him with information on the latest trouble-shooting and sales promotion techniques, sales and service aids, together with invaluable data on RCA tubes, batteries, electronic components, and test equipment.

Radio & Television Service News is a bi-monthly publication of the RCA Tube Dept., Harrison, N. J.

Joseph Pastor, Jr.
Editor

KEEPING AHEAD . . . the year 'round

First article of a regular-feature column written to help you exploit the vast service market in your area, and to help you stimulate your business on a year-'round basis.

A few months ago, one of the well-known trade publications called on 48 homes in an average, middle-class community to learn about their servicing requirements. Seventeen of the 48 householders questioned (over 35%) said they had radios that needed servicing, but that they *"did not know the name of a reliable shop to call for service"!*

Could this survey have been made right in your own local area? If these seventeen householders had no idea of whom to call for *radio* servicing, whom will they call for the even more lucrative *television* servicing, when the time comes? Will *you* miss out on the opportunity?

How much potential business is lying around in *your* town, just waiting for someone to reach out and take it? How deeply has the name of your service business been impressed upon the service prospects in your area? *Will the name of your shop come to mind when there's servicing to be done . . . and money to be made?*

In the answers to these questions are some of the underlying reasons why one dealer's annual profit is so radically different from another's . . . why one shop is booming and successful, while another fails to capture its full share of the potential business available.

Fundamentally, it's a question of outlook . . . of how you look, and where you look, and how observant you are. Probably *the biggest single factor is simply the degree to which each dealer takes advantage of the opportunities that continually come his way* . . . opportunities in the form of new ideas, new programs, sales-stimulating material that *is offered and available to all.* Only *few really take advantage of these opportunities,* and, *consequently, only these few really cash in and succeed.*

Let's examine this a little further. Think of all the leading manufacturers whose products you use. Many of them turn out quality products which are backed by fine engineering skill. Yet, all the fine products and services in the world would be useless if nobody heard of them and nobody used them. Consequently, these leading companies maintain full-time advertising and public relations staffs to make certain that the outstanding features of their products are well known to the people who are ready, willing, and able to buy them. These manufacturers would no sooner think of trying to operate without a program of advertising and promotion than they would try to stay in business without tools,

(Continued on Following Page)

RADIO PHONO TV * TIPS

MODELS
T121, 9TC245, 9TC247, 9TC249
Poor Vertical Sync

Reports from the field show that in a few cases poor vertical sync has been caused by capacitor C-136 (cathode by-pass for V-108). In some cases, this capacitor had broken loose from ground.

Some vertical-oscillator transformers (marked 274011) with too high a Q caused a white condition at the top of the picture and possible instability of sync. The Q of the transformer can be lowered by connecting a one-megohm resistor across the green and yellow transformer leads.

MODELS A-106, 9W106
Correction to Parts List:
CHASSIS ASSEMBLIES

The stock number of the FM oscillator coil is incorrectly listed as 73817. The correct stock number is 74817.

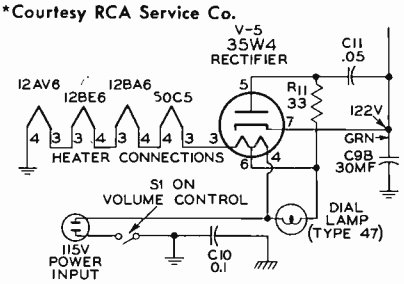
MODELS
X551, X552 (RC-1089B, RC-1089C)
Addition of Resistor

A 33-ohm resistor has been added between pins 5 and 6 on the rectifier tube socket. This resistor minimizes the current surge which occurs if the set is turned on immediately after having been turned off. Dial lamp and tube life are lengthened by the addition of this resistor. The revised rectifier circuit is illustrated below.

Addition to Parts List:
CHASSIS ASSEMBLIES

514033 Resistor, fixed composition, 33 ohms ± 20%, 1 watt (R11).

*Courtesy RCA Service Co.



KCS72 SERIES TV RECEIVERS
MODELS
17T200, -201, -202, -211, -220
21T208, -217, -218, -227, -228, -229
Weak-Signal-Area Operation

In weak-signal areas, noisy sound may be experienced when receiving signals of 20 micro-volts or less. Assuming that the receiver is in proper alignment, the following suggestions may result in discernible improvement:

1. Watch the picture, and turn T105 (from the top of the chassis) one-half to one turn clockwise to improve the sound. Adjustment of T105 should not weaken or decrease picture contrast.

2. On high channels, a slight improvement in both picture and sound may be obtained by retouching antenna trimmer C22 (located between the 6CB6 rf tube and the antenna matching transformer unit).

3. In some cases, retouching the tuning of sound-if transformer T101 may improve the sound.

Extended Fine-Tuning Range

To meet the requirements of weak-signal receiving conditions, the fine-tuning range of the local

(Continued on Page 9, Col. 1)

FOR FASTER SERVICING...Two New Booklets Simplify the Selection of Proper RCA TV Replacement Parts

The RCA Tube Department has recently brought out two new time-saving publications to help the busy serviceman. They are:

RCA TV Components (Form No. CTV-1015). This booklet contains 24 pages of electrical characteristics, circuits, and diagrams for the following RCA TV Components: coils, controls, deflecting yokes, magnets, transformers, and traps. In addition, it contains outline drawings, terminal-connection diagrams, chassis-cutout drawings, and five pages of typical circuits. To provide for quick reference, components are indexed by numerical order, by type-number designation, and in alphabetical order by function.

RCA TV Replacement Guide (Form No. SP-1006B). This 20-page guide lists the major components of more than 70 brands of TV receivers for which RCA replacement components are available. It is composed of tables of replacement parts arranged alphabetically by TV set brand name. More than 1,500 sets are listed by model numbers in groups having common replacement components. The manufacturer's stock number and the suitable RCA replacement component number are presented in an easy-to-use table which simplifies finding the proper replacement part.

These new booklets are now available from your local RCA parts distributor.

Form CTV-1015

Form SP-1006B

This RCA Radio Battery Window Display Kit (3F459) is now available to radio service dealers. With this new kit, you can build a bright, colorful, window display. The kit contains 14 easily assembled RCA Battery display cartons, a window streamer, and two rolls of RCA-red crepe paper —all the materials to do a professional job!

Ask your distributor salesman to send you one of these kits along with your next RCA Battery order. Then, put it to work building RCA Battery sales for you.

KEEPING AHEAD

(Continued from Page 3)

machinery, and equipment. You can't do business if your customers don't know of your existence!

Now, let's bring this down a little closer to our own level. In business, we plant and we reap 52 weeks a year. We plant technical skill and quality merchandise, together with sound business knowledge, and a good supply of friendliness, courtesy, enthusiasm, and everything else that is necessary for building a reputation.

Now, let's consider the "seeds" that make for a real bumper crop. At RCA, we seriously shoulder our responsibility (to ourselves and to you) of furnishing the kind of products, ideas, and programs that are needed to help you build your business. If you cultivate these "seeds," then *you* reap a rich harvest. And so will your distributor. And so will RCA. There's nothing seasonal about our planting time. It's a year-'round, week-in, week-out effort. Our goal is always a year-'round, week-in, week-out, rich, rewarding harvest.

In this column, which will appear regularly in RADIO AND TELEVISION SERVICE NEWS, we will help you to do a good deal of "planting," by suggesting the right kind of "seeds" for a continuous bumper crop. We'll discuss methods for *stimulating your business above and beyond "what comes in naturally."* We'll offer suggestions to help you grow, and keep growing . . . to catch up with, and cash in on, all the golden opportunities in this fabulous business of ours.

Throughout this series, the accent will be on ideas that *you* can use . . . immediately . . . on a profitable basis . . . without consuming an unfair portion of your valuable time and money. In this column, we'll confine ourselves to the non-technical aspects of getting ahead . . . and KEEPING AHEAD.

Our aim is to foster a year-'round "promotional" point of view which will help you to gain recognition and build an enviable reputation in your community. We'll present a continuing program of positive action, to help you build for a prosperous and sound future.

If you have any problems or questions on the "promotional" phase of your business, don't hesitate to drop us a line. We'll be glad to answer all questions either directly, or by means of this column.

TV Spurs Quality Upgrading of Receiving Tubes

The development of television, which brought forth the most complex and critical electronic equipment ever designed for home use, was recently credited with stimulating important post-war advances in the design and production of radio receiving tubes.

As a result of television's impact on the tube manufacturing industry, receiving tubes produced today for use in home television and radio sets in some cases surpass in performance, efficiency, and versatility some of those especially designed at the close of World War II for non-entertainment applications, according to L. S. Thees, General Sales Manager of the RCA Tube Department.

Preparations for the commercial introduction of television showed that few existing electron tube types, designed originally for home radio applications, were fully capable of meeting the more exacting demands of television, Mr. Thees explained.

Establishment of public confidence that television was ready for the jump from laboratory to living room depended almost entirely on the assurance of faultless performance of receivers in the home, Mr. Thees declared. As a result, the tube industry was faced suddenly with the problem of rapidly refining existing radio receiving tube types, as well as developing new ones having unprecedented performance, quality, and reliability.

The upgrading of RCA radio receiving tubes for more demanding television and non-entertainment applications developed into a major and continuing activity immediately following the war. The quality level was rapidly raised by application of important post-war advances in design and production

(Continued on Page 10, Col. 1)

More on Tube Quality

Sage words of advice from D. M. Branigan, Manager of Receiving Tubes, Renewal Sales, RCA Tube Department, "Recently, several dealers have called to our attention various advertisements, sales bulletins, and verbal quotations offering receiving type tubes at *prices far below our current suggested dealer prices.* In most cases, it is indicated that these tubes have no standard manufacturer's brand and can be branded to suit the buyer, or else they carry a name other than that of a nationally advertised manufacturer. It is generally claimed that such tubes are "guaranteed" and of high quality. We have been asked to explain the existence of such tubes in view of these very low prices and claims of high quality.

"From our experience, it is our belief that such offers are based upon a supply of tubes which do

(Continued on Page 11, Col. 1)

PART 7—Inside the House

In the house, determine where a hole should be drilled in the floor to permit entry of the transmission line from the basement. The hole should be drilled after giving the necessary consideration to appearance, nearness to the TV set, and accessibility to the basement. If an electric drill is used, *its housing should be grounded.*

After the hole is drilled, insert a piece of "ground wire" through the hole so that this point of entry to the set location can be easily found from the basement.

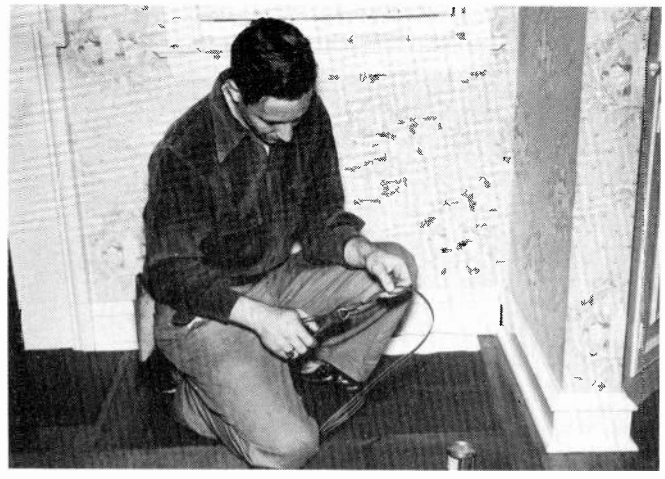
Pull the transmission line taut through the hole from outside, and tack it securely at the point of entry.

Install an RCA 214X1 or 215X1 lightning arrester and ground it to a cold-water pipe. Run the transmission line through the arrester as directly as possible to the hole through the floor. Tack the line neatly and securely.

Attach the end of the transmission line to the end of the ground wire which was previously dropped through from the room above. Pull the line up from the basement. Make the line taut and tack it securely at the point of entry from the basement, then fill the hole in the floor with Plastic Wood or a similar product.

Move the set into position to determine the length of transmission line necessary to reach the antenna terminals; don't forget to provide sufficient slack so that the set can be moved for servicing. Cut the line and attach spade lugs to the ends of the leads before connecting them to the set.

If an electric drill is used, make certain that it is grounded.



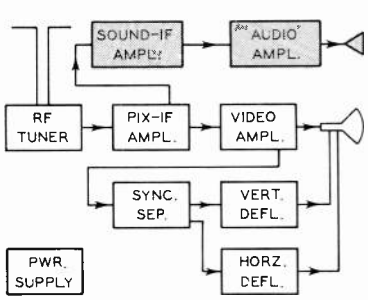
Use your RCA drop cloth to prevent soiling the customer's rug.

INTERMITTENT - CONTACT TROUBLES

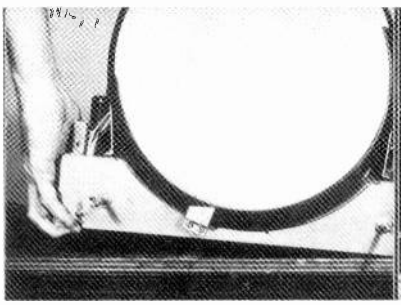
By John R. Meagher

Noted RCA Television Service Specialist

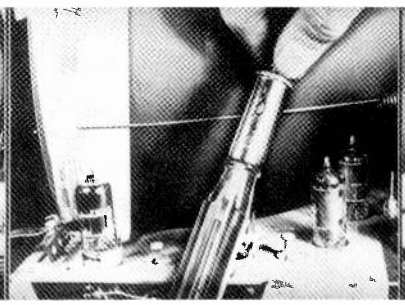
While complete in itself, this article is Part 16 in the series, "TELEVISION SERVICE" by Mr. Meagher



1. *Localize the intermittent-contact trouble to a particular section of the receiver by analyzing the symptoms; e.g., if the sound is intermittent, but the picture is OK, the trouble is probably in the sound-if or audio sections.*

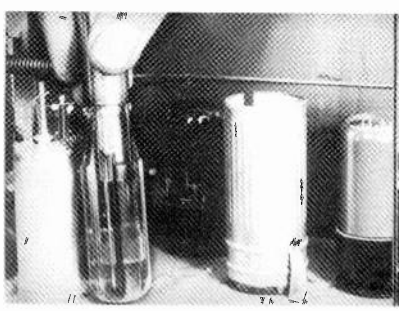


2. *Twisting and shaking the chassis is helpful in (a) making the trouble occur, (b) revealing incipient intermittent contacts, (c) dislodging pieces of solder that may cause present or future trouble.*

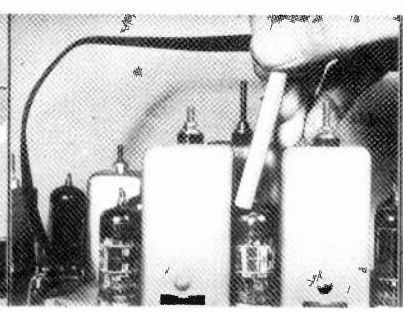


3. *Tap the chassis at different points in the suspected section. Use the handle of a screw driver or other tool.* Tap only hard enough to make the trouble occur.

4. Lay that hammer down! *Severe jarring may create new troubles in tubes, and may shift components or bare leads into troublesome contact with other circuits.*

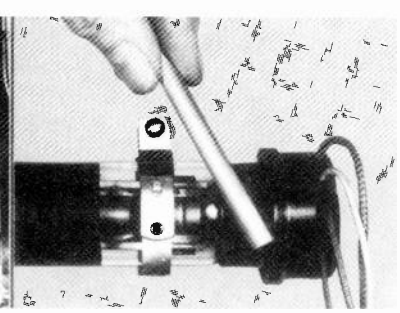


5. *Narrow the trouble down to a small area by lightly tapping at different points on the chassis in an effort to find the area that is most sensitive to tapping.*

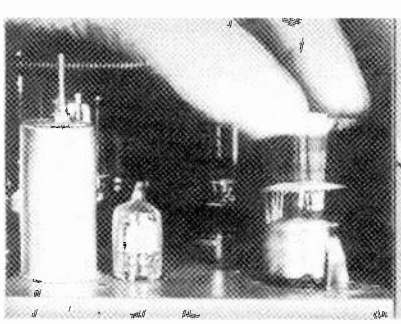


6. *Lightly tap each tube in the suspected section. If trouble occurs, the intermittent may be in the tube, the socket, connections, or components associated with the particular tube.*

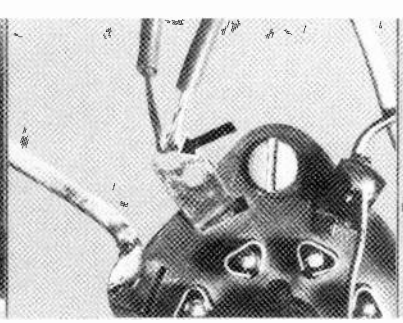
7. *Check any suspected tube by trying a new one. Repeat the tapping test. If trouble is still present, the fault is not in the tube.*



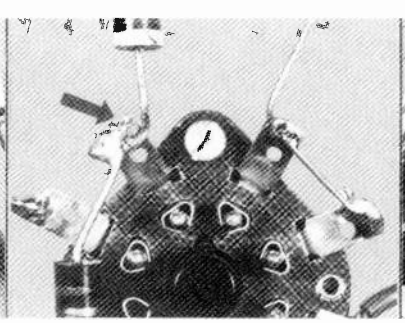
8. *Don't forget to check the picture tube in cases where the intermittent-contact trouble affects the picture or raster. Tap the neck of the tube lightly.*



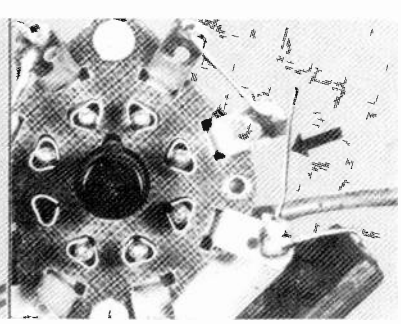
9. *Gently "wiggle" each tube in the suspected section with a rotary motion. If trouble occurs, check connections and components associated with the particular tube, according to steps 10—44.*



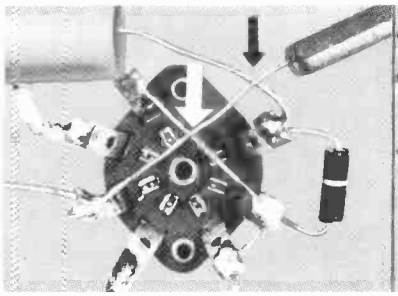
10. *Look for unsoldered and cold-soldered joints on the socket terminals, and on any associated terminal boards, coils, etc.*



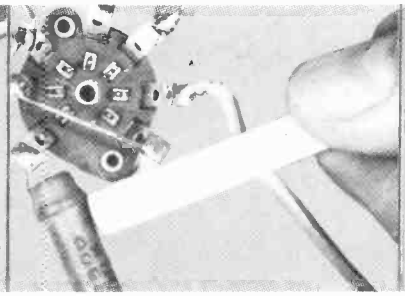
11. *On terminals that have two or more wires, be certain that each wire is soldered. Occasionally, the solder may completely miss one of the wires.*



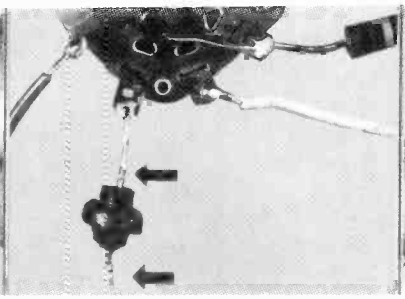
12. *Look for stray strands of wire making intermittent contact between terminals on the socket, on associated terminal boards, or from a terminal to the chassis, etc.*



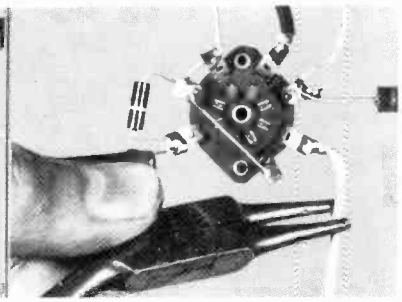
13. *While wiggling the tube, look for undesired contact between bare wires, between a bare wire and a terminal (or chassis) etc. Provide adequate clearance to prevent such trouble.*



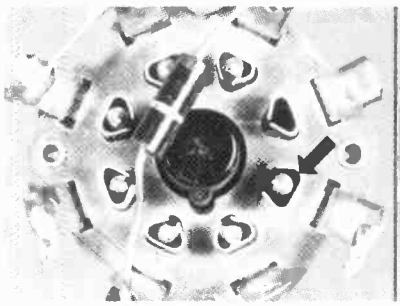
14. *Gently tap, pry, and push on each resistor, capacitor, coil, etc., connected to the particular socket, to see if the intermittent contact is in one of these components.*



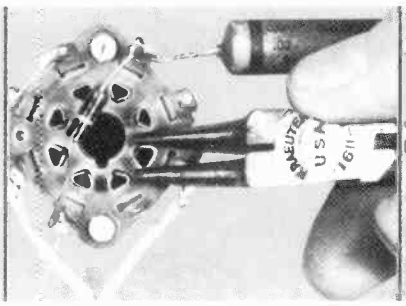
15. *Check the thin enameled-wire leads on open-type peaking coils for bad soldering and breaks. Check by tapping the coil. Re-sweat the thin-wire joints and recheck.*



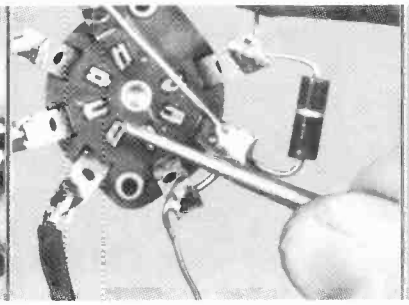
16. *Pull and push on each lead to the socket, and on the leads to associated components, in an effort to find the intermittent connection. Use insulated pliers.*



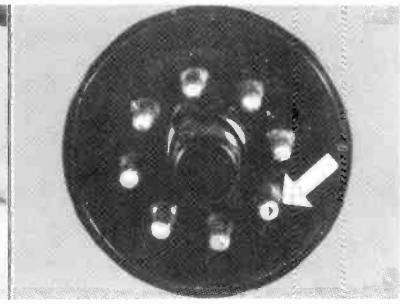
17. *Contact troubles are extremely rare in present-day tube sockets. One contact on this socket was intentionally spread apart to show the appearance of a loose contact.*



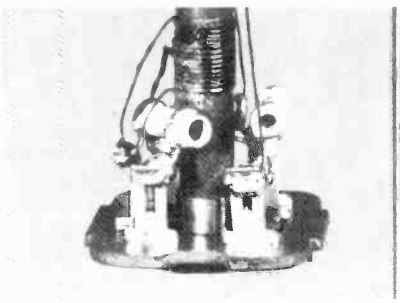
18. *Look at the socket contacts while wiggling the tube. If one of the contacts is not making solid contact with the tube pin, bend it back into shape with a pair of pliers.*



19. *A loose contact on a wafer-type, miniature-tube socket can be bent into correct shape with a pointed tool.*

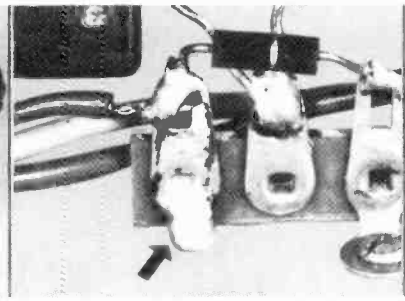


20 *It is a rare occurrence to find an unsoldered or poorly soldered pin on a tube base. If such trouble is found, resolder the pin.*

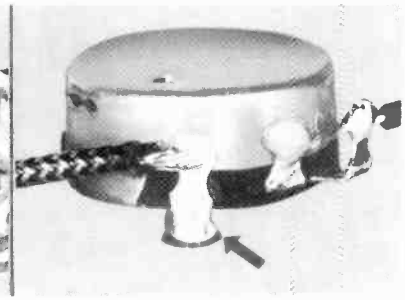


21. **Don't overlook the possibility of a broken wire, bad joint, or other trouble inside an if transformer.** *Check for breaks in the thin-wire leads. Resweat all poorly-soldered joints.*

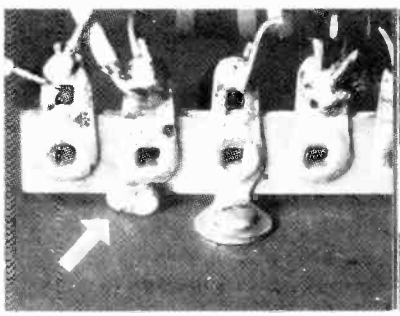
22. *Look for loose, cold-soldered joints. Resolder all suspicious-looking joints.*



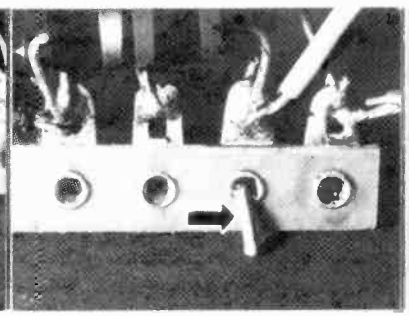
23. *Look for excess solder which has flowed down to the chassis from terminal-board lugs, socket terminals, etc.*



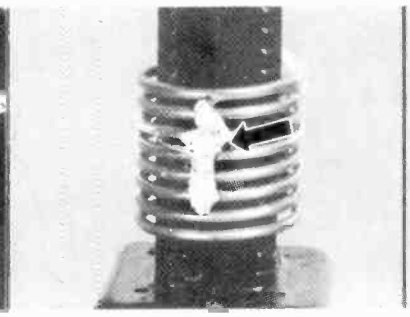
24. *Examine all potentiometers in the suspected section for excess solder and for bent terminals which can make intermittent contact with the chassis.*



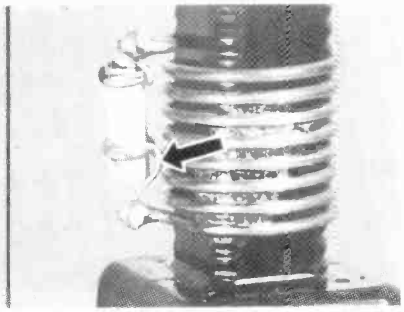
25. *Look for lumps of solder that may cause intermittent short circuits or grounding on terminal-board lugs, socket terminals, etc.*



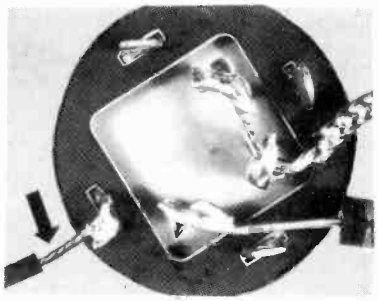
26. *Don't forget to inspect the rear of each terminal board for stray pieces of solder and wire.*



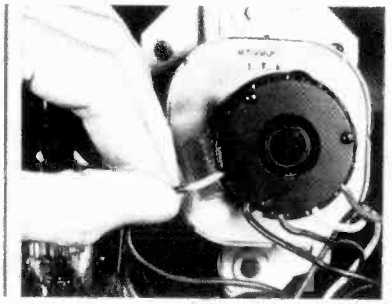
27. *Look for splashes of solder on bare-wire coils, and for small bits of solder lodged between adjacent turns on such coils.*



28. *See that the leads of an associated component are not shorting out turns on bare-wire coils.*

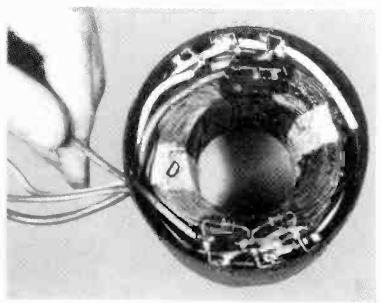


29. *Check for the possibility of accidental grounding of the negative terminal or leads of electrolytic capacitors that are insulated from the chassis.*

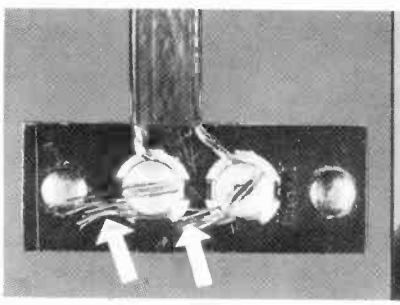


30. *Pull and push on each of the leads to the picture-tube socket in cases where the intermittent-contact trouble affects the picture or raster.*

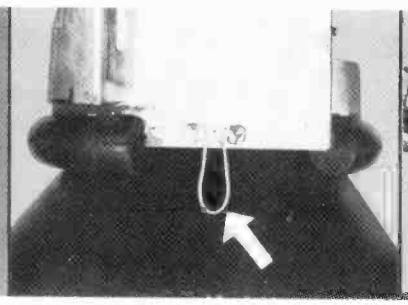
31. *In cases of intermittent-focus trouble, pull and push on the leads to the focusing coil if the set has an EM or EM-PM coil.*



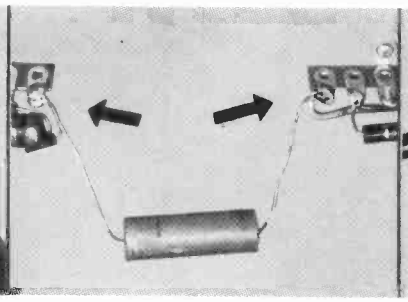
32. *In cases of deflection trouble, don't forget to check the leads and connections in the deflecting-yoke circuit.*



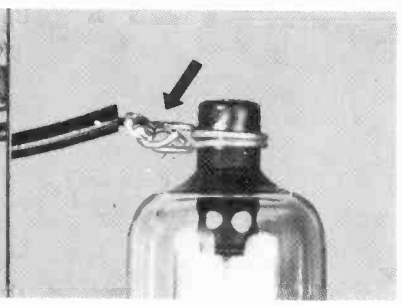
33. *Check for frayed-out strands of wire on the terminal boards.*



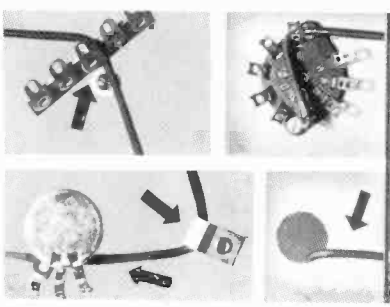
34. *Make certain that the grounding clips make good connection to the conductive outer coating on glass-type picture tubes that have such a coating.*



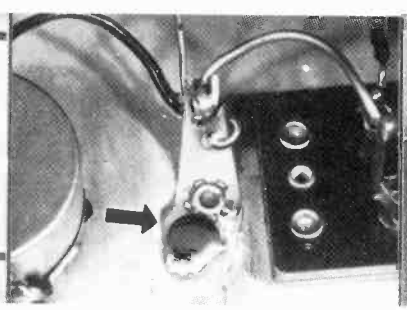
35. *Beware of heavy components supported by long, thin leads. They may shift out of position, due to jolting in transit. Anchor such components.*



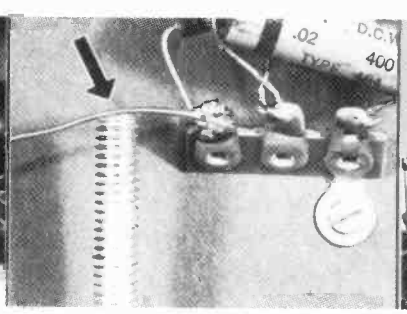
36. *Check top-contact clip leads for loose soldering, and for broken strands that may eventually cause trouble.*



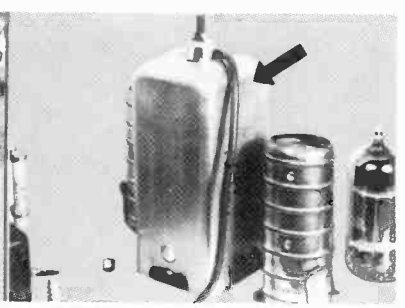
37. **Beware of leads that are pulled tightly around sharp edges** *of terminals, clamps, chassis holes, etc. Also, beware of leads that are squeezed tightly under a potentiometer, etc.*



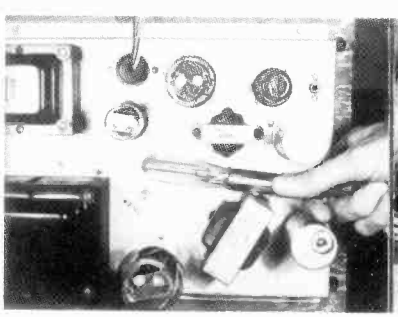
38. **All connections to the chassis** *should be soldered. Soldering lugs that are bolted, screwed, or riveted to the chassis (without also being soldered) will eventually cause trouble.*



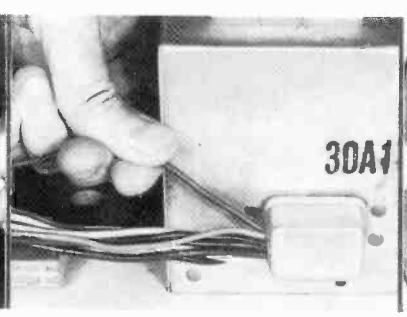
39. *If a set works OK out of the cabinet, but develops trouble when bolted into the cabinet, see if one of the bolts is responsible.*



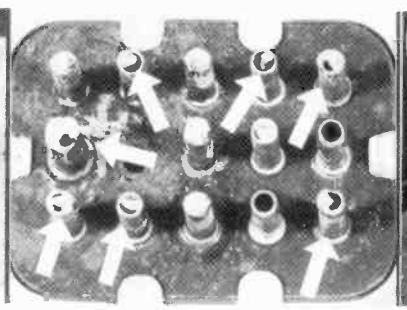
40. *Poor contact between a top clip and shield often causes intermittent change in response during alignment, especially in the sound-if and discriminator. Connect the clip to the chassis.*



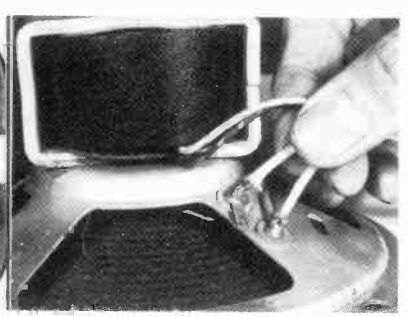
41. *If the intermittent trouble does not show up in the receiver chassis, check separate units such as power supply, deflection chassis, speaker, etc.*



42. *Check all cables that connect to the separate units. Pull and push on each lead in each cable wherever possible. Shake and flex each cable over its entire length.*



43. *Check connections in cable plugs and sockets. Be wary of any plug that has been "worked on," like the horrible example above.*



44. *In cases where the intermittent-contact trouble affects the sound, don't forget to check the speaker. Check the voice coil, field coil, output transformer, cable, plug, and socket.*

Experimental TV Set Employs 37 Transistors

The accompanying photograph shows one potential application of the pioneering research work and the remarkable progress made in the transistor field by the David Sarnoff Research Center and the RCA Tube Department.

This experimental TV receiver represents an attempt to build a completely portable television set using transistors in place of all electron tubes except the picture tube. The purpose was to try transistors in all TV-receiver circuits in order to uncover problems and make an initial effort towards their solution.

This TV set is a single-channel receiver, with a five-inch screen, no larger than a portable-typewriter case (12 by 13 by 7 inches). In recent tests, the 27-pound, battery-operated receiver produced a satisfactory picture when operated with its self-contained loop antenna five miles from the Channel-4 transmitter (in the Empire State Building). With a small "rabbit-ear" antenna, a satisfactory picture was obtained 15 miles from the transmitter

The receiver employs 37 developmental and experimental transistors, both junction and point-contact types. Its total power consumption is 14 watts—less than 1/10th that of an average table-model set.

Gerald B. Herzog, of the RCA research staff, makes laboratory tests on an experimental battery-operated television receiver which uses developmental and experimental transistors and no tubes except the 5-inch picture tube.

RADIO PHONO TV * TIPS

(Continued from Page 3)

oscillator circuit has been extended in the KRK8D rf tuner. This feature allows optimum fringe-area performance, permitting receiver adjustment so that the picture carrier may be located at the most advantageous point on the slope of the if response curve.

The additional flexibility in receiver operation also results in other advantages. It is possible to achieve more attenuation for the adjacent picture channel, compensation for transmitters with more than normal peaking, reduced service calls due to oscillator drift changing picture and sound-carrier if signal ratio, and greater convenience in UHF operation.

As a result of this extended range, fine tuning may seem somewhat more critical to adjust than was previously the case with other receivers. No difficulty should be experienced as a result of this sharpness of tuning. However, it may require a conscious change in habit for those who have become accustomed to conventional-range, fine-tuning controls.

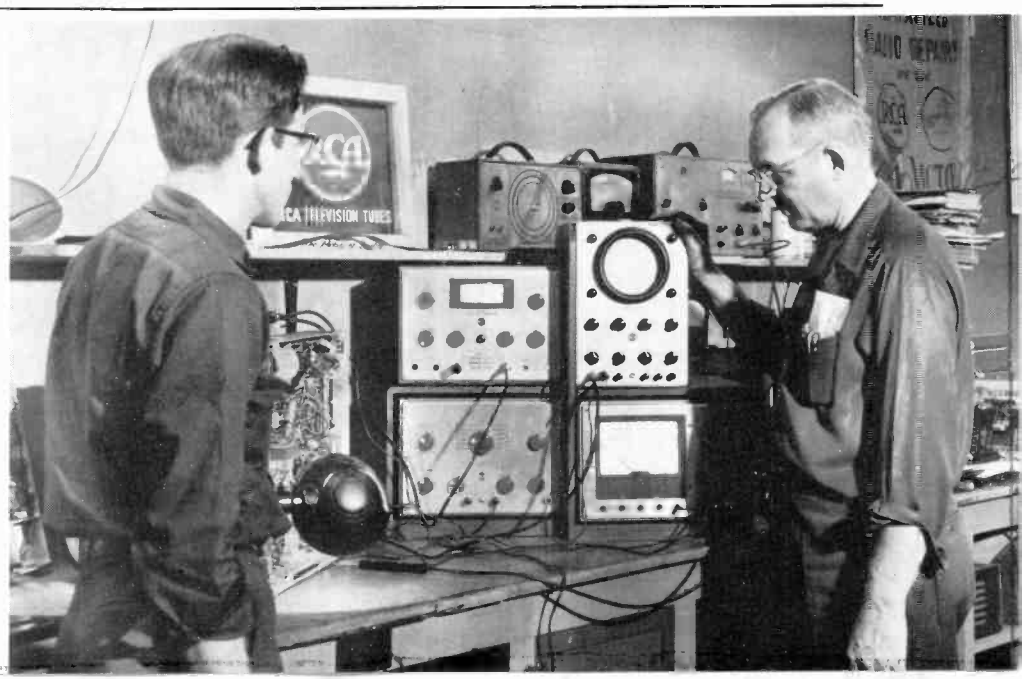
Extended Horizontal-Hold Range

Similarly, the front-panel horizontal-hold control range has been increased. Because of the synchroguide horizontal-oscillator characteristics, this adjustment is in no way critical; however, the receiver may lose horizontal sync at the extremes of the control rotation. This is not necessarily an indication of faulty horizontal-oscillator operation, and should not be mistaken as such. This modification allows the user greater control over the receiver by permittng him to compensate for horizontal-oscillator drift by means of a front-panel adjustment rather than a service adjustment on the chassis rear apron.

AGC Adjustment

As explained in equipment service notes, the correct AGC adjustment is important in obtaining the best performance from the receiver. Adequate picture contrast may also be difficult to obtain if the AGC control is not properly adjusted, inasmuch as the AGC-control setting determines the if signal-voltage level appearing at the picture second detector. In medium- and strong-signal areas, this adjustment should be made on the strongest signal to avoid receiver overload. In weak-signal areas, the maximum clockwise adjustment which gives best signal-to-noise ratio (minimum snow) may be preferred.

(Continued on Page 11, Col. 1)



Service Manager Olin Love (left) and Manager A. C. Kimbirl of Radio TV and Appliance Service of Charlotte, N. C. are shown looking over their new RCA Test Equipment and an RCA Four-Position Step Rack. They operate an eight-man shop and their TV servicing ability is highly respected by other TV servicemen in the area. To do the job more efficiently, these experts chose the following RCA Test Equipment: WR-39C Television Calibrator, WO-88A Oscilloscope, WR-59B Television Sweep Generator, and a WV-87A Master VoltOhmyst.

Set up this RCA radio-battery tester and tester-counter shelf in your shop and cash in on the swelling demand for portable-radio batteries. Straight from the famous line of RCA Test Equipment, the WV-37A will also be found very handy for keeping a "running-check" on the condition of your shelf stock of RCA batteries.

RCA RADIO-BATTERY TESTER CHECKS PORTABLE-RADIO BATTERIES UNDER LOAD

Now you can test portable-radio batteries under actual load or conditions without the necessity of placing the batteries in the set. The RCA WV-37A contains a built-in load circuit which provides "in-use" testing conditions.

The rugged, easy-to-read, 4½-inch meter has two meter scales which simultaneously indicate the condition of the battery under test and the advisability of replacing it. The top scale indicates the existing percentage of rated battery voltage. The lower scale indicates the battery's condition as "GOOD," "USEABLE," or "REPLACE."

A selector switch on the front panel accommodates the popular types of portable-radio batteries ranging from 1.5 to 90 volts. Eight additional blank test positions are provided to enable you to set up load and voltage conditions of your own choosing for testing additional battery types . . . a feature which prevents obsolescence of the tester.

You'll find the new RCA WV-37A Radio Battery Tester a worthy addition to your service shop. Use it on the sales counter for checking used batteries or assuring the customer that your replacement stock is fresh. It is useful on the service bench because the built-in load circuit makes possible more accurate measurement of battery condition than can be provided by conventional voltmeter alone.

The WV-37A is shipped to you complete with an attractive counter-display shelf. Ask your RCA Battery Distributor salesman how you can obtain the tester and counter shelf (3F441) at low cost with your purchases of RCA Batteries. (The suggested user price of the WV-37A, complete with probes, is $24.95.)

TV SPURS QUALITY UPGRADING OF RADIO RECEIVING TUBES

(Continued from Page 5)

techniques, and by institution of a coordinated production program involving tighter control over more critical specifications, use of more modern production equipment, and use of improved and newly-developed raw materials.

Since the war, the RCA Tube Department alone has invested millions of dollars in modern test equipment to make sure that more exacting tube specifications are met every step of the way along the production line.

Some of the advances in tube design are: the gold-plated grids used in certain tubes intended for applications requiring tight control of critical tube characteristics; lead-glass envelopes, which replace conventional lime-glass envelopes in a number of high-voltage tube types to provide better life performance; cathode clips and inverted-pinched cathodes, employed in certain tube types for greater resistance to vibration and to minimize microphonics; and double-helical coil heaters, which provide tube types having greater freedom from hum and better over-all performance for certain applications.

Now that vacation time is here, why not plan a profitable sales promotion campaign to boost your sale of RCA portable-radio batteries? A small ad such as this in your local newspaper, or a sign in your window, will do the trick.

The unprecedented quality and performance efficiency of the modern radio receiving tube result as much from general technical advances applied across the board as from these special design features, according to Mr. Thees.

Most RCA receiving tubes, for example, use RCA-developed carbonized nickel-plated anodes, which provide 97 per cent of the radiating effectiveness of a true black body, as compared with 68 per cent for conventional carbonized nickel-plated anodes, Mr. Thees explained. This increased effectiveness leads to longer tube life because the anodes operate at lower temperatures.

Among other engineering and production advances which have contributed to the high quality level of the modern receiving tube, Mr. Thees listed individual matching of cathode base metal and carbonate coatings for each RCA tube type; adherence to strict mica tolerances (tighter than usual in the industry) to improve tube stability and reduce microphonics; utilization of more sprayed micas than the industry in general (to provide greater freedom from leakage noise and other internal leakage effects); and appreciable reduction in the number of tube welds to minimize the number of possible failure points.

MORE ON TUBE QUALITY (Continued from Page 5)

not fully meet the first-quality standards of the tube manufacturing industry. In this connection, we are pleased to advise you that such a product will not be of RCA manufacture since RCA does not directly or indirectly sell tubes which do not meet our regular quality standards. *It is a basic RCA policy to sell only one quality of tube*—that is, top quality! *Any tubes which we produce that fail to meet such standards are destroyed at our factories and, hence, cannot be offered on a reduced price basis.*

"We are also convinced that the radio and television servicing organizations want, and need, the best quality tubes which they can buy! The extra costs involved in unnecessary call-backs to replace defective tubes, combined with the customer doubt and dissatisfaction which can be created, makes the highest-quality tube available the best buy. And the only way you can be certain of obtaining RCA quality tubes is to purchase regular RCA tubes in the familiar red, white, and black RCA cartons from RCA tube distributors."

SELL THE BRAND NAME

"Sell the Brand Name," is the title of a short sales article in the May issue of *Service Management* by L. S. Thees, General Sales Manager, RCA Tube Department. It is well worth a few minutes of your time to "look up" this gem on Selling.

Here is another good use for your RCA Battery Window Display Shelf (3F443). Together with an RCA Victor portable and some RCA Radio Batteries, this display will attract plenty of attention, and will identify your store as the portable-radio headquarters in your neighborhood.

Selling RCA's two sensational, steel-encased, portable-radio batteries (VS216, 67½-volt "B," and the VS236, 1½-volt "A") is easy with the aid of an RCA New Types Window Streamer (Form 3F436) and the New Types Counter Card (Form 3F437). Give your in-store merchandising of these remarkable batteries a lift by ordering these sales aids from your RCA Battery distributor.

A Reminder

Now is the time to start concentrating on portable-radio battery business in your area. Your RCA Battery sales opportunity is better today than ever before. Capitalize on it now. Details on how RCA Batteries put you ahead are given in the colorful 1953 RCA Battery "Map" Flyer. It illustrates all of RCA's outstanding sales-promotion materials which you will receive with your battery order.

If you did not already receive a Battery "Map" Flyer, ask your RCA Battery Distributor Salesman for a copy (Form 3F444). Then order your supply of RCA Batteries by simply filling out the self-mailing order form.

RADIO PHONO TV * TIPS

(Continued from Page 9)

Ion-Trap Adjustment

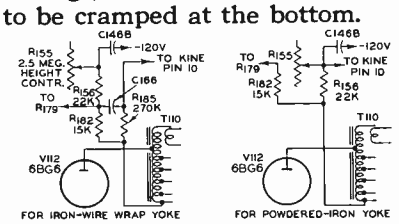
Ion-trap adjustment, especially in weak-signal areas, should not be overlooked as a means of obtaining increased contrast. The proper setting of the ion-trap magnet depends somewhat upon the position of the brightness control for the best picture. A minor readjustment for maximum brightness may result in an improved picture in weak-signal areas when receivers have previously been adjusted for operation on stronger signals.

MODELS 1X591 & 1X592 (RC-1079K, RC-1079L) Change in Resistor

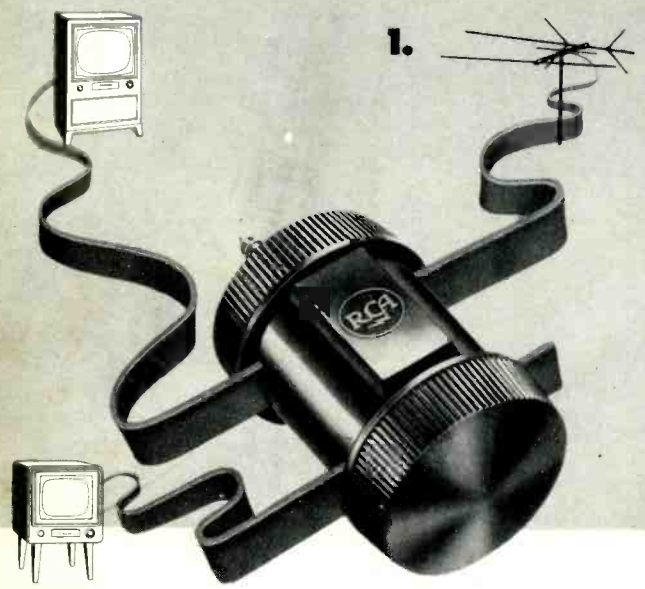
In the late production of these receivers, fuse resistor R16 was changed from 15 ohms, ½ watt to 33 ohms, 1 watt. The stock number of the 33-ohm resistor is 514033.

MODELS T100, T120, TC124, TC125 TC127, TA128, & TA129 Vertical Nonlinearity

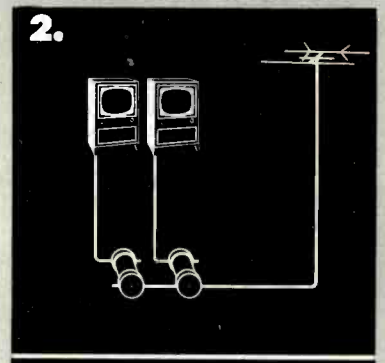
Receivers employing powdered-iron-core yokes may be modified to prevent poor vertical linearity, which shows up as cramping at the bottom of the picture. The nonlinearity can be corrected by raising the vertical-oscillator plate voltage by changes in the B-boost filter as shown below. This change also prevents the formation of an extremely bright spot on the screen immediately after the set is turned off. If C146B develops excessive leakage, it will cause the picture to be cramped at the bottom.

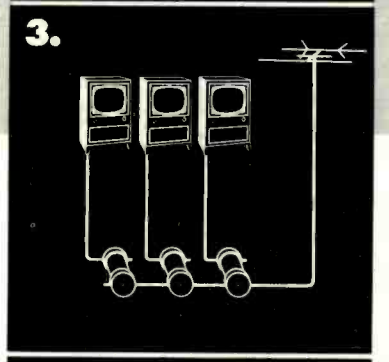


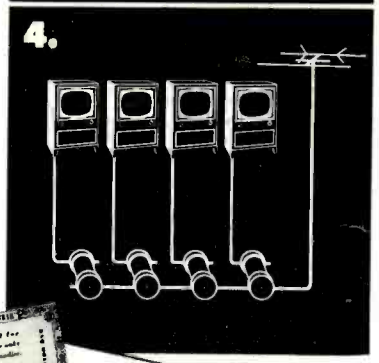
It's new...it's simple...it's inexpensive!



Illustrations show four coupling arrangements. Method used depends on available signal, number of sets, and strength of local interference.







The RCA-240A1 TV Set Coupler

- ✓ **Easy to install . . . self-contained wood screw**
- ✓ **For 300-ohm ribbon-type line**
- ✓ **Reduces oscillator interference between sets**
- ✓ **Only $1.95 suggested list price**

Now, it's a simple matter to operate two or more TV sets from a single antenna. The four illustrations show you how easy it is. There's no need to cut or splice the twin lead because connections to the coupler are automatically made when the screw caps are tightened. A wood screw in the base makes it easy to fasten the coupler to a wall or baseboard. You can make an installation in a matter of minutes.

The new RCA-240A1 coupler will help you sell customers a second set . . . let people "double up" on apartment antennas . . . provide a simple, inexpensive floor demonstration set-up for dealers. That's why you'll want a good supply on hand to take care of the *extra* business that will come your way. See your **RCA Parts Distributor** today for full details.

Earn Valuable Premiums!

When you purchase RCA TV Set Couplers —and other RCA Electronic Components —you receive coupons that entitle you to valuable premiums. RCA Parts Premium Program closes July 31, 1953 . . . so, hurry. Get full details from your **RCA Parts Distributor** today.

RADIO CORPORATION of AMERICA
ELECTRONIC COMPONENTS **HARRISON, N. J.**

Form 3547 Requested

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