



RADIO AND TELEVISION

# Service News

A PUBLICATION OF THE RCA TUBE DIVISION



MARCH

1957

Vol. 22, No. 1

*"Don't let just anybody monkey with your TV set!" is the theme of this truly sensational painting by Lawson Wood, world famous illustrator of monkeys. It is this irresistible painting around which RCA has designed its new consumer-directed Monkey Display Kit (Form 4F22) and Direct-Mail Monkey Post Cards (Form 4F39), key sales promotion items in the third annual National Television Servicemen's Week campaign sponsored by the RCA Tube Division. "Heart" of this campaign is the new RCA Electron Tubes Authorized Dealer Program that's sure to win you increased business and prestige. (See story beginning on page 2.)*



## No Need to Fear RCA Factory Service

Reports from the field indicate that many independent technicians are refusing—and rightly so—to fall prey to the mistaken belief that RCA factory service will threaten their economic future.

By their refusal, these independents are showing all concerned that they have not lost faith in the nation's leading radio and television manufacturing firm which has cooperated with them through the years. In addition, these independents are letting it be known that they are deeply appreciative of the invaluable information on servicing which RCA has passed on to them in publications, lectures, clinics, and home-study courses.

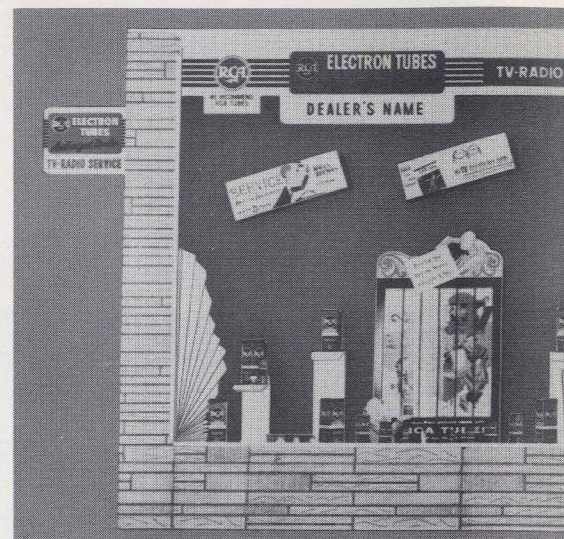
It should be understood that the independent technicians who criticize the critics of RCA factory service have taken time out to look at the record. They do not fear the existence of RCA's service operations for they fully realize that RCA today services only a small percentage of the TV sets it manufactures—10% to be exact. This 10% figure represents a mere 1½% of the total number of TV receivers in home use. Certainly the 1½% of America's overall TV servicing business that is not going to independents because of RCA's service operations is no cause for alarm—especially since RCA factory servicing is decreasing rather than increasing percentage-wise.

In 1949, for example, RCA serviced 18% of the total number of home TV receivers—as against the current 1½%. This great percentage drop in RCA factory servicing emphasizes the fact that as trained independent service technicians have grown in number so have they rapidly won a larger and larger share of the home TV receiver servicing business.

When studying reliable statistics indicating that independent technicians now help to maintain 90 out of every 100 RCA TV sets in home use and nearly 99 out of every 100 home TV receivers, also do not lose sight of the fact that a vast multitude of servicemen are doing so with RCA's aid. A tremendous amount of television servicing information is continually disseminated by the company to the independent service technician in order that he may improve his servicing techniques and business procedures. The millions of copies of vital service publications already issued by RCA, as well as the company's sponsorship of hundreds of lectures by service authorities, the conduct of thousands of service clinics, and the distribution of thousands of TV courses, should convince you that the company most assuredly is sincere in its drive to better the independent's financial status by helping him to know more about the business he is in.

A carefully studied estimate indicates that of the 180,000 electronics maintenance technicians in the United States today, slightly less than 3,000—or 1½% of the total

number—are in factory service. This national total includes all of the men employed by all of the companies now offering factory service. (See page 6.)



## RCA SPONSORS 3<sup>RD</sup>

The time has again come for the independent service-dealers and technicians across the nation, their local RCA tube and parts distributors, and the RCA Tube Division to link arms and join forces in putting across the annual National Television Servicemen's Week program, which extols the American TV serviceman for his technical skills and commercial integrity.

Conceived and sponsored by the RCA Tube Division and listed with the United States Chamber of Commerce, the third anniversary of National Television Servicemen's Week will be officially observed from March 25th to 30th. If this year's event is anywhere near successful as the first two—and it promises to be more so—you owe it to yourself to give it your fullest support. See your RCA distributor right away. He stands ready to offer you a wide

**RCA**

**RADIO AND TELEVISION**

### Service News

A PUBLICATION OF THE RCA TUBE DIVISION

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 trouble-shooting and sales promotion techniques, sales and service aids, together with invaluable data on RCA tubes, transistors, batteries, parts, and test equipment.

MARCH 1957

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## Frank M. Folsom States Five-Point RCA Policy

An open letter to the servicing industry, highlighting a statement of "RCA's fundamental policies with regard to servicing," was issued recently by Frank M. Folsom, in his capacity as President of the Radio Corporation of America.\*

Mr. Folsom's open letter reads in part as follows:

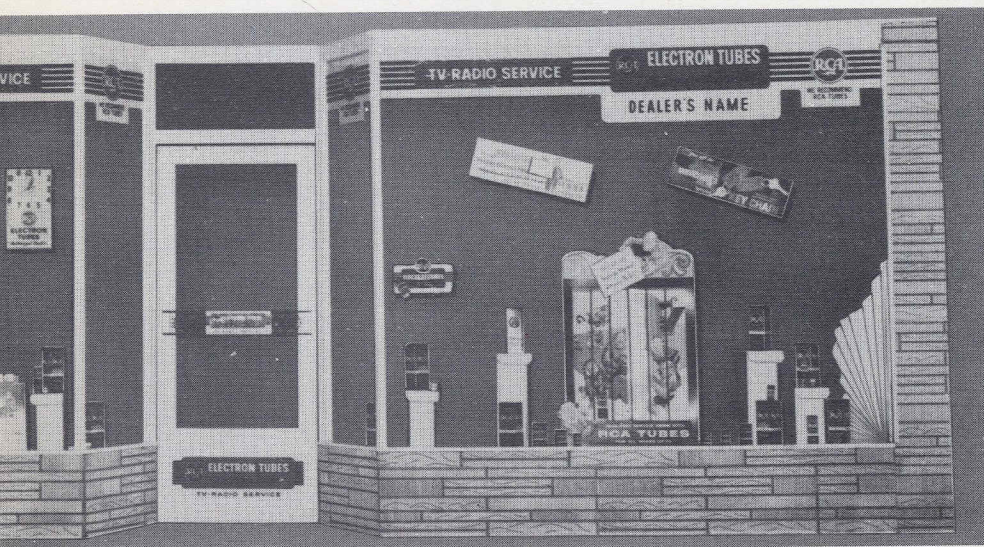
The rapid expansion of the electronics industry has been characterized, like other fast-growing industries, by many new developments and changing conditions. Some of these activities have created a feeling of uncertainty and confusion in some segments of the

servicing profession. As a timely contribution toward clearing up this uncertainty and confusion, RCA's fundamental policies with regard to servicing are herewith reaffirmed and amplified:

(1) RCA believes that full customer satisfaction depends on a vigorous and healthy independent service industry and, therefore, RCA will continue to make available to the servicing profession the information and knowledge it acquires in its own operations.

(2) RCA believes in the free competitive system in the operation of its factory service business. In this, inde-





Here's a sample of a window display which you can set up. It features many of the dynamic new sales promotion items now being offered by your Authorized RCA Tube Distributor to help you—as an Authorized Dealer of RCA Electron Tubes—to capitalize on the current National Television Servicemen's Week campaign sponsored in your behalf by the RCA Tube Division.

## ANNUAL NATIONAL TELEVISION SERVICEMEN'S WEEK

array of sparkling new RCA advertising and sales promotion materials that will help you take complete advantage of this spectacular prestige-building and sales-boosting celebration.

National Television Servicemen's Week—1957 version—should prove especially beneficial to you in sparking your business in general and your sales of RCA receiving tubes, picture tubes, and parts in particular. Backed by a well-planned schedule of impressive advertisements in leading national consumer magazines, as well as dramatic commercials on popular network radio and TV shows, this aggressive merchandising campaign not only features special NTSW business aids—but also presents the service industry's most valuable dealer identification program, a “natural” to bring you increased customers and profits.

Standing behind you and your fellow independent servicemen as it has always done, RCA will salute your industry by publicizing the 1957 NTSW in the March 23rd issues of *THE SATURDAY EVENING POST* and *TV GUIDE* magazines and in the March 25th issue of *LIFE*. More than 35-million TV viewers are expected to read these powerful, colorful ad insertions, thus focusing immediate public attention on your store or shop when you tie in with local NTSW identification.

In addition, RCA will spread the good word about Servicemen's Week with special announcements on coast-to-coast radio and TV shows, including the Perry Como program on March 23rd. Popular song stylist Vaughn Monroe will present RCA's notable NTSW commercials, spotlighting the important role you play in “keeping

the show on the air.” Mr. Monroe will direct TV-set owners to the service shops displaying the new RCA identification pieces which are part and parcel of the current promotion campaign.

You personally can supplement RCA's ad placements. Ask your RCA distributor to supply you with the specially prepared NTSW newspaper advertisements, publicity stories, and spot radio and TV commercials. Use them to alert your local service customers and prospects of your participation in the March 25th to 30th event.

To help you put the “sell” in the current National Television Servicemen's Week “sell-a-bration,” your RCA distributor can supply you with many dazzling RCA NTSW sales promotion aids, as follows:

(Continued on next page)

## in Open Letter to Independent Radio-Television Service-Dealers

pendent service organizations must have equal opportunity to compete with RCA factory service for consumer service arrangements on RCA Victor television sets.

It is our further belief that in any plan under which the original price of the television receiver includes service through the warranty period, dealers must have full freedom to provide their own service or provide the service through independent service organizations or RCA factory service. In the exercise of this choice, the dealer must not be restricted to “captive service.”

(3) RCA believes in, and plans to continue, its service organization's program for procuring replacement parts and other material on a basis that is fair and competitive with the independent service-dealers.

(4) RCA believes that good customer service requires broad distribution of replacement parts. It will continue its long established policy of making all repair and replacement parts available to the service industry through all of its distributors.

(5) RCA believes in supporting every forward-looking industry-wide

program aimed at increasing the respect of the consuming public for this vital arm of the American distribution system. RCA will continue to recognize the independent service industry in its advertising program and printed literature.

\*Brig. General David Sarnoff, Chairman of the Board of Directors of RCA, has announced the election of Mr. Folsom as Chairman of the Executive Committee of the Board and John L. Burns as President and a director of RCA. (See story on page 9.)



# RCA SPONSORS THIRD ANNUAL NATIONAL TV SERVICEMEN'S WEEK

(Continued from preceding page)

## (1) Monkey Display Kit (Form 4F22)

No doubt about it! This appealing display kit will tell your vital "expert service" story quickly and effectively, for the clownish antics of monkeys are universally popular. Place the RCA Monkey Display in your store window and just see how readily it will get your timely message across to sidewalk traffic.

The three-dimensional litho display is built around an original painting by Lawson Wood, the world famous illustrator of monkeys. It measures 40¾ inches high by 27 inches wide, and can easily be set up in minutes to build up an extremely colorful window display that's sure to work wonders. You really must see the Monkey Display to appreciate its friendly, irresistible appeal.

## (2) Direct-Mail Monkey Post Cards (Forms 4F39-A, -B, and -C)

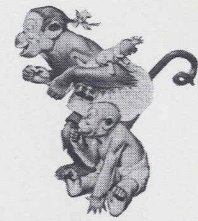
Since many TV-set owners rely on the telephone to call in a technician for TV repairs, many of your best customers and prospects may miss seeing your Monkey Display during NTSW. These giant postcards are your answer, for they can carry your pertinent story into virtually every home in your market area. Each card is printed in color and contains space for a postage stamp and your imprint. The cards will work best when mailed in a series over a three-week or four-week period.

## (3) Dealer Publicity-Advertising Kit (Form 4F42)

You will find this carefully assembled kit a valuable time and money saver, enabling you to carry out a relatively low-cost yet effective NTSW publicity and advertising campaign in your local area. The kit contains: TV servicing publicity stories for release to local newspapers—with space provided in the stories for mentions of your name; a proof sheet showing impressive NTSW ad mats that also give prominence to your name and address; a sheet of reproduction art for use in any advertising or special displays you may want your newspaper or display studio to prepare especially for your NTSW promotion; and suggested NTSW scripts for local radio and TV station spot commercials on NTSW 1957 and your service shop.

## (4) Dealer Advertising and Sales Promotion Planning Guide (Form 4F44)

Behind every successful advertising and sales promotion campaign you'll find a well prepared plan of action.



Loaded with sales appeal, RCA's irresistible three-dimensional Monkey Display (Form 4F22) is sure to tell your vital "expert service" story quickly, effectively.

You can efficiently plan your NTSW participation with RCA's special 11-inch by 14-inch planning sheets. Recommendations are printed for your advertising and sales promotion program during the time preceding Servicemen's Week. Space is provided for daily reminders of your own.

## (5) NTSW Pennant Set (Form 4F37)

These brightly-colored pennants will help you make your service shop the flagship for all NTSW activities in your neighborhood. Each set contains a 26-foot string of 24 plastic pennants. Outside your store, these pennants will flutter in the breeze, unfurling a snappy message about your big celebration. Inside, they will decorate your store and bring attention to your other NTSW displays.

As part of the set, you also will receive an assortment of brilliantly printed streamers to bedeck your front window. These streamers include messages about the NTSW keychains and TV Coloring Books.

## (6) NTSW Keychains (Form 4F40)

Here are useful gifts for your customers, building lasting goodwill for you. These extraordinary keychains feature plastic tags displaying your Electronic Statuette, symbol of your NTSW participation, and containing your imprint under the line, "If found please return to . . ." Each tag carries a serial number which you can register for each individual customer in your record books or card index—thus providing your customers with a valuable service, for your store can serve as a "Lost and Found" for their keys.

## (7) Original TV Coloring Book (Form 4F41)

And here's a gift for children that will also help you build repeat business. The reasoning for your giving away the coloring books is fundamental. When you remember the children, you're bound to get their parents' appreciation.

## (8) Practical Guide to Direct Mail (Form 4F45)

It's a fact! Direct-mail advertising provides one of the best ways of getting your sales message into the hands of a large number of selected TV-set owners at a relatively low cost. The new booklet, "Bringing In Customers by Mail," spells out in practical terms how you can successfully use direct mail as a profitable sales force. It's chock full of proven methods, mailing list information, illustrations of leading examples, etc. If you mean business, this practical guide can be as valuable to you as money in the bank.

## (9) NTSW Stamps (Form 4F38)

Every piece of mail leaving your desk can now carry your NTSW symbol by means of these special stamps, which are sure to make a good impression in every home or office they reach. Each package contains 100 NTSW stamps printed in color on gummed stock.

## (10) Ad Reprint Card (Form 4F43)

Your display of this sealed reprint card is a tailor-made way for you to tie in your own NTSW promotion with RCA's kick-off advertisement in THE SATURDAY EVENING POST, TV GUIDE, and LIFE magazines. Set up on your counter or in your store window, the Ad Reprint Card will help remind every one of your customers and prospects that you are one of the many service technicians who have played such a vital role in the fabulous world of TV entertainment.

## (11) Electronic Statuette Lapel Pin (Form 3F282)

One of the most popular items in last year's successful NTSW campaign, this miniature Electronic Statuette will serve you well in 1957 as the nationally recognized symbol of National Television Servicemen's Week. Wear this pin proudly anywhere—especially on your service calls.

## (12) RCA Tube Display Cartons (Form 2F103)

You can use these cartons to great advantage in setting up an outstanding NTSW window display. Each set contains 14 cartons in assorted sizes up to



9/4-inch replicas of the famous red, white, and black electron tube carton.

### Authorized Dealer Program

In addition to RCA's varied NTSW promotion items which can now be supplied to you by your RCA distributor, the National Television Servicemen's Week campaign this year has as its "heart" the new RCA Electron Tubes Authorized Dealer Program. Your Authorized RCA Tube Distributor is indeed happy to present this dealer identification program to you at this time—for it is unequalled in scope and opportunity. Backed by national and local consumer advertising, the Authorized Dealer Program is tied in with the most universally respected name in electronics, yesterday, today, and tomorrow—RCA.

Never before has such a far-reaching and momentous plan been prepared exclusively for radio-TV service dealers—a plan which can keep you at the lead of all radio-TV service volume in your entire market area. Don't let another valuable day slip by! See your regular RCA tube distributor salesman today and ask him how you can qualify to participate in RCA's prestige-building, profit-packed Authorized Dealer Program.

After you qualify, you will receive RCA's Dealer Appointment Plaque—the exclusive plaque by which Author-

ized RCA Tube Distributors appoint Authorized Dealers.

As the Authorized Dealer of RCA Electron Tubes, you will be entitled to purchase the following merchandisers from your RCA tube distributor:

- Metal Outdoor Hanging Sign (Form 4F31)

When you display this modern, brightly colored double-face sign, your store front will command attention from far down the sidewalk and from far across the street. The brilliant red, white, and red colors of this baked enamel, 20-gauge steel, 28-inch by 40-inch sign can really get your Authorized Dealer message across to your customers and prospects.

(A single-face, 28-inch by 40-inch tacker sign in 30-gauge steel is also available to you. Highlighting a bold Authorized Dealer message, this sign—Form 4F32—is designed for mounting flat against your building.)

- Outdoor-Indoor Metal Flange Sign (Form 4F33)

With this double-face flange-mounted sign, you can repeat your important Authorized Dealer message indoors. Place this sign over the entrance to your service shop or in any other prominent location. It can be easily mounted on any flat surface.

The Outdoor-Indoor Metal Flange Sign measures 14 inches by 20 inches and carries the same format as sign

4F31 in baked enamel on sturdy 20-gauge steel.

Outdoors, your flange sign can be mounted almost anywhere: on the front of your store or perhaps by the side entrance to your shop or even on a post on your front lawn, if local conditions permit. Just glance around and see where you can use it to best advantage.

- Illuminated Dealer Clock (Form 4F48)

Functionally designed to tell the time at a glance, this beautiful clock displays your Authorized Dealer identification against a bright background of fluorescent lighting. The stylishly molded 11-inch by 19-inch plastic face is set off by a chromium strip which binds it to a sturdy metal housing. Effective both day and night, the illuminated clock comes complete with dependable electric movement, key-hole slots for flush mounting, and eyelets for suspended mounting. The Illuminated Dealer Clock is unconditionally guaranteed for one year.

- RCA Window Valance (Form 4F56)

With the new RCA window valance, your entire store front reflects a business that's up to the minute in merchandising and service. Your store name is highlighted in this personalized and permanent valance which is

(Continued on next page)

## Tube Distributor's Color-TV 'School' Graduates 12 Technicians

Twelve service technicians who have been attending classes in color-television servicing established by Mooney's Electronic Supply, RCA tube distributor in Wichita Falls, Texas, have received certificates attesting to the completion of the special advanced course. The advanced course in color-TV servicing, formulated by RCA Institutes, Inc., one of the foremost television and electronics schools in the country, was made available through the RCA Tube Division. Classes were conducted by George Newton.

The following technicians received certificates at the graduation exercises: George Newton, O. J. Cooper, Jr., and H. C. Light of Wichita Falls, Texas; James T. Cargile and Jack Cargile of Electra, Texas; J. L. Bills, Jr., of Burkburnett, Texas; Roy V. Hall, J. T. Hall, and James Stafford of Vernon, Texas; G. S. Davison of Graham, Texas; Tommy Birdwell of Iowa Park, Texas; and B. L. Humphreys of Grandfield, Okla.

D. M. Branigan, manager, distributor sales, RCA Tube Division, presented plaques to J. B. Mooney and George

Newton in recognition of their outstanding promotion of the project.

According to Mr. Mooney of the sponsoring firm, the color-TV courses

were established to acquaint TV servicemen with the procedures that should be followed in installing and maintaining color-television receivers.



Looking in at the graduation ceremonies in which 12 technicians who had been attending Mooney's Electronic Supply Company's classes in color-TV servicing received certificates attesting to their completion of the advanced course. A. K. Mallard, D. M. Branigan, J. P. Cavallaro, and R. K. Joslin of RCA and J. B. Mooney of the distributing firm were on hand for the occasion. As the photo above shows, left to right: Messrs. Mallard, Branigan, and Cavallaro, G. S. Davison, J. L. Bills, Jr., Tommy Birdwell, H. C. Light, J. T. Hall, B. L. Humphreys, Roy V. Hall, James S. Stafford, James T. Cargile, O. J. Cooper, Jr., Jack Cargile, Messrs. Joslin and Mooney, and George Newton.



## RCA SPONSORS THIRD ANNUAL NATIONAL TV SERVICEMEN'S WEEK

(Continued from preceding page)

custom-fitted to your own window requirements. The eye-catching trim is carefully installed by expert window decorators who wash your windows before and after application.

- Adjustable Door Bar (Form 4F-34)

Protection to your door is only one of the fine qualities which this adjustable bar offers. The front of the metal bar carries a miniature sign to repeat your RCA Electron Tube identification. The back of the bar says, "Thank you, call again" to all customers leaving your store. It takes only a few minutes to install this goodwill agent.

- Outdoor Illuminated Sign (Form 4F50)

A sparkling Plexiglass sign with all-aluminum casing, this weatherproof unit features fluorescent lighting for maximum impact. Your personalized Authorized Dealer imprint clearly identifies your service shop as local headquarters for expert service with RCA electron tubes. Measuring 2 feet by 3 feet, the beautiful double-face sign, listed by Underwriters' Laboratories, requires standard 110-volt, ac current.

(A single-face unit—Form 4F50SF—is also available for mounting on store front or wall.)

- Giant Outdoor Illuminated Sign (Form 4F51)

This spectacular 4-foot by 3-foot outdoor sign is quite the attention-getter. It includes such custom features as rolled aluminum casing, double facing of durable Plexiglass, your personalized imprint on both faces, and long-lasting fluorescent lighting. Listed by Underwriters' Laboratories, the Giant Outdoor Illuminated Sign requires standard 110-volt, ac current.

(A single-face unit—Form 4F51SF—is also available for flat mounting.)

- Kick Plate Sign (Form 4F35)

Here is another way to round out your new Authorized Dealer identification program at the bottom of your door, where it affords protection from chronic "door kickers." The colorful 28-inch by 10-inch Kick Plate Sign, of course, can be displayed almost anywhere in your store.

- Truck Panel Sign (Form 4F36)

Many people come to know service shops by reading the signs on truck panels. That's why it's so important that when your customers and prospects see your truck they get a good impression. With the new RCA Truck Panel Sign posted on your truck, plus your name and telephone number clearly printed on the doors, you can tell your Authorized Dealer story all

over town. The good-looking Truck Panel Sign measures 14 inches by 40 inches, comes in 30-gauge steel, and includes hardware. It matches the modern style of the new RCA Authorized Dealer store signs.

- Dealer Decal (Form 4F47)

This decal features the brilliant RCA monogram, the famous RCA tube carton, and your Authorized Dealer message. Use it to fill that select spot on your store door or window or on your service truck. The new Dealer Decal comes in two forms: 4F47-A for mounting inside glass windows; 4F47-B for mounting on outside surfaces. Neither form requires water to apply.

\* \* \*

Now that you have read this story on preparing yourself for the forthcoming National Television Servicemen's Week, March 25th to 30th, you are aware of the extensiveness of the new program and its wide variety of business aids. The next step is up to

## Latest Studies Reveal

Radio and television technicians are in extremely short supply, according to current studies. And it appears this shortage is becoming more and more critical as the electronics industry continues to expand.

Service companies—independent as well as factory—particularly are being affected by a shortage of skilled manpower as they continue to lose maintenance technicians to the higher-paying industrial and commercial concerns which manufacture and/or use electronic products.

This shortage affects the future of qualified radio-TV servicemen in the following manner: As the number of "in use" home radio and TV receivers, record players, and tape recorders increases at a rapid rate, there is a stronger and stronger demand for the services of trained repairmen to keep these sets in good working order. As economists might state it, demand for the services of skilled technicians such as yourself conceivably could exceed the supply.

It is believed that at present there are in this country only 180,000 electronics maintenance technicians, ranging in ability from the student to the highly skilled and experienced. This figure includes the slightly less than 3,000 employed by *all* of the companies now offering factory service. Many more trained technicians are urgently needed, especially when you consider analytical reports such as the one featured in the October, 1955, issue of



Presenting the impressive RCA dealer Appointment Plaque—the exclusive plaque by which your Authorized RCA Tube Distributor can appoint you an Authorized Dealer of RCA Electron Tubes.





Close-up of RCA's colorful new single-face, 28-inch by 40-inch tackler sign (Form 4F32).

you. Unless you hop on the NTSW bandwagon immediately and start promoting your local tie-in with this nationwide celebration, you cannot expect to derive the full benefits which a hard-hitting campaign of this kind offers you. If you act without hesitation, however, you will be heading in the right direction towards increased prestige, sales, and profits in 1957.

## RC-18 FEATURES DATA ON OVER 650 TUBE TYPES

A new edition of the popular RCA Receiving Tube Manual—revised, expanded, and brought up to date—was recently published by the RCA Tube Division and is available from your local RCA tube distributor.

Identified as the RC-18, the new Manual contains technical data on more than 575 receiving tubes, including types for black-and-white and color TV and series-string applications. In addition, more than 75 picture tubes, including color types, are treated.

The new Receiving Tube Manual covers basic tube theory and application in the same easy-to-understand style used in previous editions. In the RC-18, the section on electron tube applications has been expanded to include a description of TV applications such as tuner circuits, video amplifiers, sync circuits, agc circuits, and deflection systems. Other sections include information on generic tube types, inter-

pretation of tube data, and electron tube installation.

The Receiving Tube Classification Chart is arranged to facilitate rapid selection of RCA types according to their family class, functions, and filament or heater voltages. Types having similar characteristics and the same heater or filament voltage are bracketed. Types designed for series-string applications are specially marked.

Technical data on picture tubes are tabulated in a Characteristics Chart to permit quick comparison of the features of individual types. Basing diagrams are given on accompanying pages for ease of reference.

The section on circuits covers such typical applications as superheterodyne, superregenerative, and short-wave receivers, AM and FM tuners, various types of amplifiers.

The new RCA Receiving Tube Manual is priced at 75¢.

## Critical Shortage of Skilled Radio-Television Service Technicians

TECHNICIAN magazine, a reliable industry statistical source.

According to TECHNICIAN, "The fabulous growth of TV-electronic servicing during the past 20 years—from \$80,000,000 to \$1,800,000,000 annually—is expected to continue during the next two decades, reaching a record \$8,000,000,000 by 1975."

In other words, the industry is destined to continue its striking growth and 20 years from now will be four times the approximate 1956 going rate of \$2½ billion.

Of the nation's total number of electronics maintenance technicians, approximately 155,000 are now engaged in electronics service either as owners, partners, or employees of dealer or servicing organizations. This 155,000 is really an inadequate number since about 40,000 of these are part-time operators.

There are already "in use" some 150-million home, auto, and portable radio receivers; 42-million TV sets; 16-million record players (not including the "kiddie" variety), and 2-million tape recorders. In addition to maintaining this large quantity of home equipment, the 155,000 of the nation's 180,000 electronics technicians are also being called upon to supplement the work of the professional engineers in servicing the millions of electronic devices in the following categories:

(1) Radio and TV broadcasting—the AM, FM, and TV stations.

(2) Communications—amateur radio, microwave systems, fixed and mobile communications systems used by police, forestry, taxi, utilities, etc.

(3) Industrial and commercial—industrial television, electronic computers, electronic heating and welding, safety equipment, electronic measurements and control, detection and inspection equipment, navigational devices, X-ray, diathermy, and special purpose equipment.

(4) Defense electronics—electronic equipment used by the United States government for defense purposes.

The demand for manpower to keep all of these complex electronic equipments operating is overwhelming. For this reason, since World War II there has been a very serious shortage of electrical and electronics engineers. To partially offset this shortage, manufacturers of electronic equipment and parts are employing qualified electronics technicians to perform many of the tasks normally performed by professional engineers.

There are approximately 5,000 manufacturers of electronic equipment and parts in the nation today. And a substantial number of qualified electronics technicians have been attracted to positions with these companies. Were it not for the hiring of these technicians by manufacturing companies, many more radio and TV technicians would enter the home service field.

In addition to the many makers of

electronic equipment and parts, there are thousands of industrial and commercial firms that use enough electronic equipment in their operations to justify the employment of their own electronics technicians. The many openings for qualified electronics technicians in this area alone places a strain on the supply of skilled radio and TV home service technicians.

It is also reliably reported that, at the present time, there are more than 2,000 shops in this country operating as maintenance contractors for commercial and industrial electronic equipment *only*. These are the technicians who are servicing the equipment of smaller firms and institutions that cannot justify full-time electronics maintenance men. These new industrial and commercial contract shops are expected to grow rapidly, creating an additional demand for skilled electronics maintenance technicians.

Still other thousands of technicians are employed in the Armed Services, public utilities, forestry, police, etc.

What this constant and competitive bidding for the services of qualified electronics technicians boils down to is this:

The electronics maintenance workload is building at a faster rate than technicians are becoming qualified. Independent radio and television servicemen, therefore, should have every reason to look to the future with optimism and confidence.



# New RCA Test Equipment for Radio and TV Servicing

Three new test instruments were recently added to the famous RCA line of test equipment designed for radio and television servicing applications. Now available from your local RCA distributor, the new instruments are the WV-77C Junior *VoltOhmyst*®, WV-87B Master *VoltOhmyst*®, and WO-78B Oscilloscope.

\* \* \*

**The WV-77C Junior VoltOhmyst** is a lightweight, compact versatile instrument designed for reliable measurements in radio, phono, and TV servicing applications, as well as other electronic equipment.

The new WV-77C has been provided with an improved switch-type test probe (WG-299B). This single-unit, dc/ac-ohms probe and cable has a built-in switch which permits quick adaptation to either dc-voltage measurements or ac-voltage and resistance measurements without requiring a change of probes and cables.

The frequency response of the WV-77C, for a source impedance of 100 ohms, is flat to approximately 3 Mc.

Additional features include a provision for zero-center indications; separate scales for low ac-voltage measurements; measurement of the ac component of a signal when the dc component is present; measurement of the dc component of a signal when the ac component is present; a separate dc probe with a 1-megohm resistor which

minimizes capacitance-loading effects; and electronic protection against meter burnout.

\* \* \*

**The WV-87B Master VoltOhmyst** is designed to give quality performance and reliable measurements in radio, phono, and TV equipment applications.

The WV-87B is an all-electronic voltmeter designed to measure directly the peak-to-peak values of complex waveforms and the rms values of sine waves on separate scales.

The instrument also reads dc voltage, resistance, and direct current. It is frequency compensated on all ac-voltage ranges up to and including the 500-volt range (500 rms volts or 1400 peak-to-peak volts) and can be used at frequencies up to approximately 3 Mc, depending upon the impedance of the source voltage.

When the auxiliary WG-301A crystal diode probe is used, the frequency range is extended to 250 Mc.

The meter will read to an accuracy within  $\pm 3\%$  of full scale on dc-voltage, ac-voltage, and direct-current measurements. When used to measure resistance, it will read from 0.2 ohm to 1000 megohms in seven ranges.

Additional features of the WV-87B include a mirror-backed meter scale to eliminate meter-pointer parallax; measurement of the ac component of a dc voltage or the dc component of an ac signal; meter scales stamped in black

and red for direct reading of rms, peak-to-peak, and dc voltage values.

The WV-87B utilizes the WG-299C dc/ac-ohms probe and cable which contains a built-in switch for selection of the desired measurement function. The front end of the WG-299C is designed to accommodate the WG-301A crystal-diode probe which slips into the WG-299C to form a sturdy, insulated high-frequency probe. A flexible cable is used to connect the probe to the meter. DC voltages up to 50,000 volts can be measured when the WG-289 high-voltage probe is used.

\* \* \*

**The WO-78B Oscilloscope** is a high-quality, dual-bandwidth oscilloscope designed for both color and black-and-white TV equipment servicing.

Bandwidth of the WO-78B can be changed by means of a front-panel switch which also changes the sensitivity of the vertical amplifier. The frequency response of the instrument is flat within  $\pm 1$  db from 3 cps to 5 Mc and the unit has a sensitivity of 0.1 volt peak-to-peak per inch, when bandwidth selector switch is in any one of its seven wide-band positions.

With the selector switch in any one of its narrow-band positions, the frequency response is flat within  $\pm 3$  db from 3 cycles per second to 500 kilocycles and has a sensitivity of 0.01 volt peak-to-peak per inch. The instrument has excellent phase characteristics throughout its entire frequency range.

A unique calibrating circuit provides calibration without requiring any external connections and without disconnecting the input to the scope.

Switch positions for TV-line and field-scanning frequencies facilitate signal tracing and trouble-shooting. A limiter stage in the sweep circuit insures the proper sync level for "lock-in" over a wide range of input frequencies and voltages. Two of four sync-switch positions permit lock-in on either the positive or negative portions of the vertical-input waveform. The other two sync-switch positions permit a choice of either an internal sync voltage at power-line frequency or an external signal for synchronizing the internal sweep oscillator.

The WO-78B is equipped with the WG-300B direct/low-capacitance probe and cable which connects to the V input terminal. The new probe permits the use of the WO-78B in circuits which would not function properly if connected directly to an oscilloscope.

## RCA to Produce Color-Television Picture Tube in Glass as Well As Metal Envelope; Both Types to Sell for Same Price

The RCA color-television picture tube, which has made possible the successful introduction of color television on a nationwide basis, will soon be produced with an all-glass as well as metal envelope for home color-TV receivers, according to D.Y. Smith, Vice-President and General Manager, RCA Tube Division.

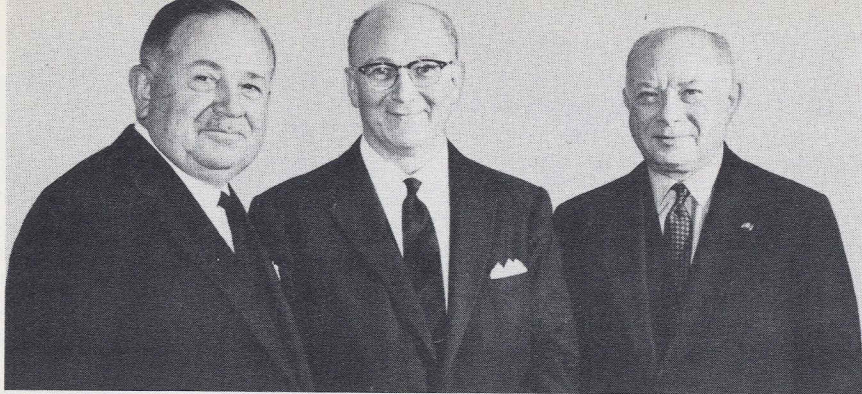
"A new round all-glass bulb and a new technique of glass sealing have been developed," said Mr. Smith, "by glass manufacturers with the cooperation of the Engineering Group at RCA's Lancaster, Pa., plant. The tube has the same excellent performance in the glass envelope as it does in the metal envelope. The price will be the same.

"Using the same successful de-

sign of internal assemblies, including the aperture mask and the three-gun mount, RCA expects to start producing the all-glass bulb version of its color-television picture tube some time during the middle of 1957. Both metal and glass versions will be made available thereafter to the industry."

Mr. Smith disclosed that one of the problems solved in development of the new glass envelope was the assembly of its two sections. He explained that this was accomplished by sealing the halves together with a unique glass flux which first melts at a relatively low temperature and then, when cooled, becomes as much a part of the bulb as the original glass.





Brig. General David Sarnoff (right), Chairman of the Board of Directors and chief executive officer of the Radio Corporation of America, is shown here with Frank M. Folsom (left), new Chairman of the Executive Committee of the Board, and John L. Burns, new President and a director of RCA.

## RCA ELECTS TWO TOP EXECUTIVES

**Folsom Becomes Chairman of Executive Committee;  
Burns Is Elected President; Sarnoff Continues As  
Chairman of Board and Chief Executive Officer**

David Sarnoff, Chairman of the Board of Directors of the Radio Corporation of America, has announced the election of Frank M. Folsom as Chairman of the Executive Committee of the Board and John L. Burns as President and a director of RCA. General Sarnoff continues in his present capacity as Chairman of the Board and as chief executive officer of the Corporation.

Mr. Folsom has served as President of RCA since 1949. Mr. Burns has been a senior partner and Vice-Chairman of the Executive Committee of the management consultant firm of Booz, Allen, and Hamilton, which he joined in 1941.

"This action was taken at the request of Mr. Folsom, who informed me of his intention of retiring from active service upon reaching retirement age in two years," General Sarnoff said. "He asked that his successor as President be selected at this time to permit an orderly transition in management.

"The election of Mr. Folsom as Chairman of the Executive Committee and the assumption by Mr. Burns, as President, of the key operating responsibility will enable our organization to keep pace with the changing demands and great opportunities of the rapidly expanding electronics industry.

"In the past 10 years, RCA's business has grown from an annual volume of \$236 million to \$1 billion and \$125 million. This growth has increased the complexity of the company's activities. Our rate of growth is such that each of our executives is carrying many times his responsibilities of even five years ago and the requirements continue to increase.

"Mr. Burns' years of experience in solving the organization and related problems that accompany business

growth will prove invaluable as RCA continues to advance. Working with Mr. Burns, Mr. Folsom and I will concentrate on the company's major objectives, policies, and programs during the period ahead which we believe will be the greatest in the history of the electronics industry.

"Mr. Burns is no newcomer to RCA, for he has been intimately associated with our activities for the past 10 years. He has worked closely with us in our periodic reviews of the company's objectives, policies, organization planning and our business programs and operations. All our executives are enthusiastic about working with him.

"In selecting Mr. Burns, who is only 48 years of age, for this important post, we are continuing to build for the future. He brings to our company a unique combination of scientific and engineering knowledge, experience in industrial production and operation, and an exceptionally broad understanding of business generally.

"We are doubly fortunate in that Mr. Folsom has agreed to continue with RCA in a counseling capacity for five years after his retirement from active duty in 1959."

A recognized leader in merchandising with 40 years' experience in the field, Mr. Folsom joined RCA in 1944 after World War II service as chief of the Procurement Branch of the United States Navy Department. With RCA he served first as a Director and Vice-President in charge of the RCA Victor Division, became Executive Vice-President in charge of the RCA Victor Division on June 1, 1945, and was elected President of RCA on December 3, 1948.

"I am pleased with the action taken by the Board of Directors," Mr. Folsom

said. "I have known and worked with Mr. Burns ever since I first retained the services of his organization for RCA. He is ideally qualified to coordinate and direct the efforts of our splendid executive team.

"Under the new setup, in addition to my work with General Sarnoff and Mr. Burns on the company's major policies and programs, I shall now be able to give increased attention to merchandising activities which are fundamental to our future growth."

A native of Watertown, Mass., where he was born November 16, 1908, Mr. Burns was graduated as an electrical engineer from Northeastern University in 1930. He received his Master's and Doctor of Science degrees in metallurgy at Harvard, and taught there and at Lehigh University. While a student and instructor he was employed by the Western Electric Company and Dewey & Almy Chemical Company before joining Republic Steel Corporation in 1934. There he served in various executive capacities such as Director of Metallurgical Laboratories, Director of Quality Control, Director of Process Engineering, Superintendent of Large Ingot Manufacture, Manager of the Grand Crossing Works, and Superintendent of the Wire Division, until he left in 1941 to become a partner in Booz, Allen, and Hamilton.

As a management consultant, he and his firm have made studies and implemented programs for one-third of the hundred largest corporations in the country, covering 350 of the 500 different lines of business in the United States, as well as practically every department of the executive branch of the Federal Government and a number of foreign governments and public institutions.

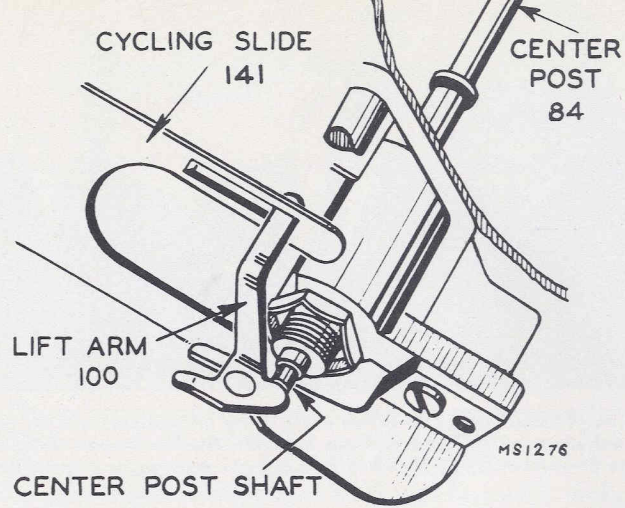
The author of many papers on scientific and business subjects, Mr. Burns has served as a director of several important business and industrial corporations. He is married, the father of two children, and lives in Greenwich, Conn. He is prominent in public affairs both locally and nationally.

Commenting on his election to the Presidency of the Radio Corporation of America, Mr. Burns said: "During the past 10 years of fine personal association with General Sarnoff and Mr. Folsom and their executive staff, I have acquired great admiration for the RCA team, what it does, and what it stands for. As I considered the future, I was deeply impressed with the opportunity for public service offered by this job. The potentialities of RCA are so great and varied that, like a small boy in a pantry full of cookie jars, I find the appeal and challenge of my new assignment irresistible."



From RCA Service Company:

# RADIO PHONO TV TIPS



## Automatic Record Changers

**Stalling in Cycle:** It has been found in the 93409 series and the 930800 series record changers that hesitation or tendency to go through mid-cycle with effort is most often caused by either one or both of two conditions.

Sometimes oil or grease on rubber tires of the driving mechanisms and on the inside of the turntable are the cause of the trouble. These parts should be thoroughly cleaned with carbon tetrachloride. When reassembling, do not touch these parts with oily fingers.

The other condition is caused by the lift arm jamming in the slot of the cycling slide. It should be noted that in going through the cycle, the lift arm is actuated by the cycling slide and in

turn actuates the center shaft of the spindle or centerpost.

In some instances, the center shaft of the spindle has reached its maximum travel before the slide reaches its maximum travel. Under these conditions, the lift arm will be jammed in the slot of the cycling slide.

This condition may be remedied by either of the following two methods: (1) bend the lift arm, or (2) install a shim under the end of the lift arm mounting bracket (next to the centerpost). If there is insufficient movement of the center shaft, the record-dropping mechanism will fail to operate properly (especially when the 45-rpm centerpost is in use).

**Bending of Spindle:** Careless positioning or removal of the 45-rpm centerpost (1½-inch diameter) on the center spindle (¼-inch diameter) will result in bending of the center spindle. When the center spindle is bent, it may result in erratic operation of the 45-rpm centerpost. To avoid bending of the spindle, the 45-rpm centerpost should be carefully placed over or removed from the small diameter spindle with a *straight vertical motion*.

**Alternate 45 RPM Centerpost:** An alternate type of centerpost for use with 45-rpm records has been used with late production models of these particular record changers. As a complete assembly, it is directly inter-



Dealer meetings, such as the one recently sponsored by Radio Equipment Company, RCA distributor in Lexington, Ky., are indicative of the constant striving by RCA and RCA distributors to help independent service technicians increase their knowledge of TV servicing. In the photo at left, independent servicemen at the Radio Equipment get-together look on while John R. Meagher, nationally recognized RCA authority on TV servicing, uses RCA's new WR-46A Video Dot/Crosshatch Generator and WR-61B Color-Bar Generator to align a color-TV receiver.

## PUBLIC CONFIDENCE IN SERVICE

What with RCA's fervent and constant support of the independent TV service technician, you may wonder how come the company entered the TV servicing field and to what extent this move has benefited the industry?

Figuratively turn the clock back to 1947, the year following RCA's introduction of the first post-war television sets. Here is what was happening then:

A great TV boom was looming on the horizon—yet a survey of the radio repair industry showed that there were only 25,000 radio servicemen in the United States at that time, and of this number only a relative handful had sufficient technical "know-how" to handle the installing and servicing of TV receivers. It was only too clear to RCA and other TV manufacturers that the number of qualified independent TV service technicians had to be greatly increased. But this could not be done without further guidance and training, a time-consuming project. And time was of the essence that year.



changeable with the early production centerpost, but the component parts are not interchangeable. To easily identify the early and late production models, note that the separator knives and shelves of the early production model extend through cutouts in the nose cap, whereas in the late production models they extend through the spindle body. The replacement parts of the late production assembly are listed below.

Stock No.	Description
79096	Centerpost—45-rpm centerpost complete
79201	Cap—nose cap
79203	Knife—record separator knife (1 set)
79202	Spring—record separator knife spring
79204	Lever—actuator lever assembly
79205	Shelf—record support shelf
79206	Spring—record support shelf spring (16 turns)
76936	Screw—#4-40 screw for nose cap
79208	Washer—fibre washer
76954	Spring—rotor lift spring (coil) (1.168-inch O.D. x 1 inch—4.5 turns)
79209	Lift—rotor lift
79210	Retainer—rotor lift retainer (8-tooth)

## 1957 Tube Inventory Guide and Order Blank Issued

Waiting for you at your RCA tube distributor's: your copy of the new RCA Tube Movement and Inventory Guide for 1957 (Form 3F37B) and the new RCA Electron Tube Order Blank (Form 3F231E).

Tailor-made to help service-dealers eliminate their tube inventory-order problems, these new forms—announced simultaneously—have been revised to include all entertainment receiving tubes and picture tubes which have moderate activity. They, thereby, should prove even more effective than previous editions.

The Tube Movement and Inventory Guide for 1957 is based on a thorough

study of national movement by tube type in the renewal market, with consideration given to new trends and developments. Properly used, it will point up: (1) your opening inventory each month; (2) your unfilled orders; (3) your completed orders, and (4) your sales, by type. This information will help you keep a balanced stock inventory, guiding you in turning over your stock more often. With current information about each tube type at a glance, you then will be able to more easily and more accurately gauge your business volume—and, in addition, have more time to spend boosting your business through promotions.



THREE-COLOR VERSIONS of RCA's impressive Form 4F30 window streamer (reproduced above) are currently helping independent radio-TV dealers and technicians across the country to promote their services and, in turn, to dissuade "Mr. Fix-It Yourself" consumers from going to supermarkets, drug stores, and/or stationery stores to have electron tubes tested. Available from local RCA tube distributors, the transparent-type streamers are super-size—measuring 13 inches by 40 inches.

## TECHNICIANS INCREASED BY RCA'S ENTRY INTO TELEVISION SERVICING

There was an *immediate* need to condition the buying public to recognize that service of a TV set is essential to maintain the peak performance of this 20th century marvel. Hence, RCA knew that it was imperative that its own factory-trained TV servicemen "hold the fort" while independent TV service technicians were in training.

The company, therefore, assigned its servicemen to areas having the largest concentration of TV sets. Then as now, these RCA technicians were permitted to service only one brand of receiver—RCA.

The move by RCA to establish a TV servicing organization, more than any other, gave a status of necessity and a position of importance to the electronics maintenance industry. It is an accepted fact that the RCA Service Company has helped build public confidence not only in factory servicemen but—even more important to you—in independent technicians as well.

Through the years, RCA's factory

service organization has furthered the advancement of television by providing the company with much-needed information leading to the design of new, low-cost test equipment which independent technicians have found vital for their servicing operations.

In addition, the servicing "discoveries" of RCA's servicemen have helped the company (1) to prepare essential service data bulletins and books, (2) to set up service clinics and lectures, and (3) to develop TV correspondence courses for circulation to active and potential independent service technicians.

Here are some facts and figures concerning RCA's aid to independent service technicians:

- During the last 12 years 12,282,000 copies of RCA Service Notes and Service Tips—covering black-and-white and color TV receivers, radios, "hi-fi" equipment, and phonographs—were distributed throughout the electronics maintenance industry.

- During the last 10 years, some 78,000 independent servicemen attended more than 300 Johnny Meagher Dynamic Demonstrator and Test Equipment lectures sponsored by RCA and RCA distributors.

- During the last nine years, some 500,000 copies of RCA "Pict-O-Guides," "TV Servicing," and respective supplements were distributed. These well-known, popular servicing publications were prepared by John R. Meagher, nationally recognized RCA authority on TV servicing.

- During the last seven years, more than 170,000 independent service technicians attended RCA's 3,013 TV Service Clinics dealing with both black-and-white and color TV sets. During these Clinics or as a result of these Clinics, over 500,000 TV Clinic books were distributed.

- During the last four years, more than 25,000 Color-TV Home Study Courses were distributed through RCA distributors and the RCA Institutes.





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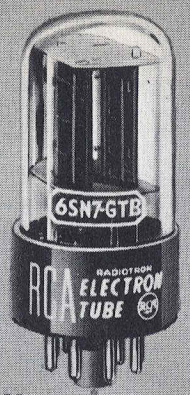
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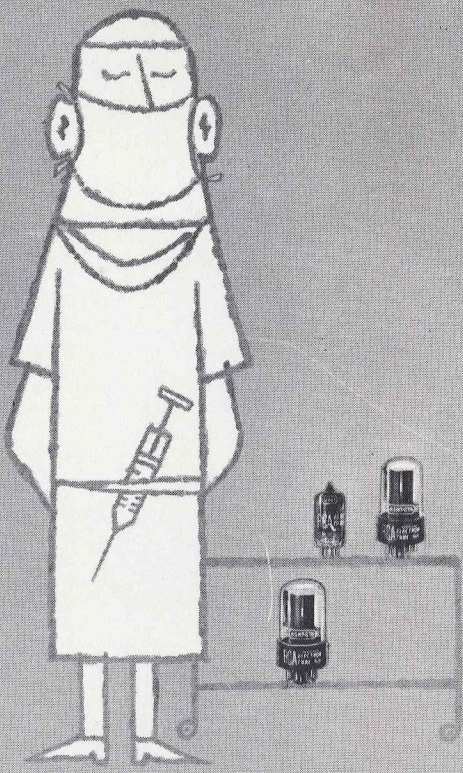
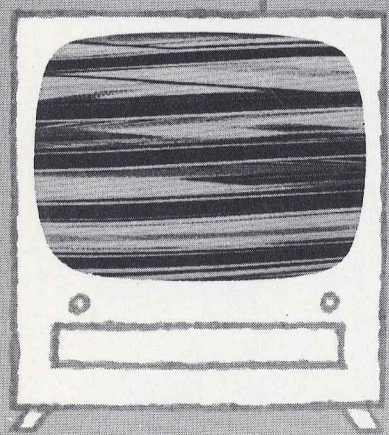


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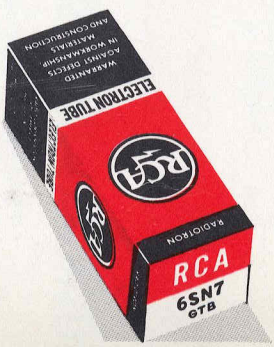
for  
WEAK  
"SYNC"



give that set a "shot" with  
**RCA TUBES**

When the picture symptom is "unstable sync"—check into that sync separator, sync amplifier, video if, and video amplifier, and use RCA Tubes when you replace.

Designed and built to some of the tightest electrical tolerances in the tube business, RCA Tubes are the answer for replacement types that fit the circuit. Take the RCA-12AU7 and 6SN7-GTB, as examples. In these types, plate current cutoff characteristic is extremely uniform from tube to tube. And stability is excellent—even under wide variations in heater voltages. When you replace—go 100 per cent with "RCA's", and watch your bench-time drop. When you order—tell your distributor "RCA only" and watch your profits grow.



**RECEIVING TUBES**

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