

PHILCO

SERVICE and ACCESSORY

Merchandiser



VOL. 1

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NO. 5

Season's Greetings
and

Best Wishes
for a

Happy and Prosperous
1949





DOING FINE—Emil Janelli, of Yeadon, Pa., who has built up a successful business on his Philco Auto Radio Warranty Service.

PHILCO EXPANDS NATIONWIDE AUTO RADIO WARRANTY SERVICE

Membership Over 4000

Philco Service has set up a nationwide system of auto radio servicemen to provide complete auto radio warranty service.

Differing from the warranty policy on home radios and other products, auto radio warranty is set up so that the authorized Philco auto radio stations are reimbursed by Philco Corporation for labor which they provide in the cause of warranty service.

Under this flexible nationwide system, a customer who purchases a radio in Seattle, Washington, for instance, may drive to Miami, Florida, and all the way on his trip can receive free warranty service through members, for 90 days after the set is bought.

Members Benefit

At the present time, over 4000 members of Philco auto radio warranty service are benefiting from this plan. Naturally, this organization is tied in closely with car manufacturers

and dealers themselves, since Philco is supplying two custom-radio sets to Studebaker, one set to Packard, and one set to Chrysler.

Actually World-Wide

This organization is actually world-wide, as there are Philco auto radio warranty service representatives throughout South and Central America, Europe, Asia, and Africa.

Complete Information Supplied

These Philco members require technical information, and the auto radio section of the Philco Service Division provides them with service bulletins on all models of auto radios as well as complete and concise technical information on charges, additions or deletions to sets or circuits, and also mailings which assist the members to increase their business and improve customer relations.

Closely-Knit Group

It is a closely knit operation, which also brings the distributors' service departments into the picture, so that

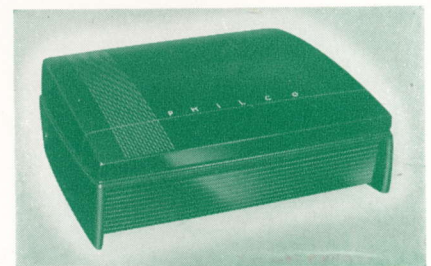
(Continued on page 7)

M-15 CABINET AVAILABLE IN TWO COLORS

CORRECT NAMES IMPORTANT WHEN ORDERING

Replacements for cabinet sections of the M-15 LP Record Player are available in two colors. It is important to note the color and correct name of the part when looking up the part number for ordering.

Earlier models of the M-15 have cabinets of solid brown, while later models have cabinets of brown "swirl." Also note that the "Cover"



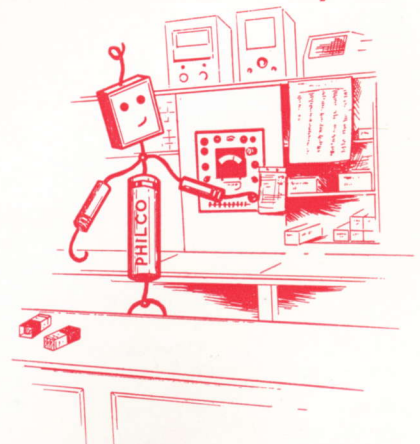
given in parts lists is the snap-in piece in the base, not the Cabinet Top, which is opened to use the player.

Part numbers for solid brown cabinet parts replacements are:

Cabinet Base	54-4604
(Less cover and tone-arm rest)	
Cabinet Top	54-4605
Cover	54-4607
Tone-Arm Rest	54-4638

For part numbers of brown "swirl" cabinet parts, add -1 to the above numbers.

MIKE FARAD Says:



"I always leave the old tubes with the customer so he won't think I'm a gyp."

PHILCO SCRATCH ELIMINATOR USES TUBE AS CONDENSER

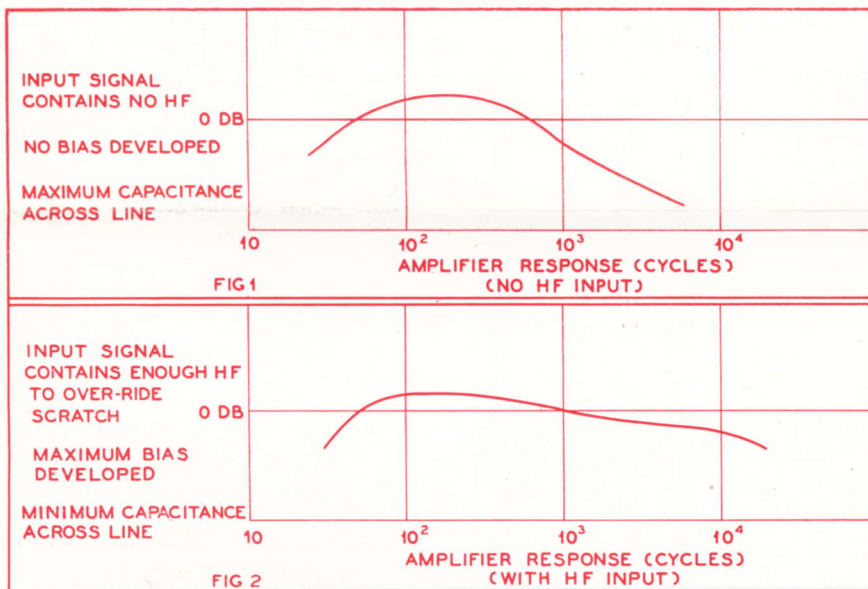
This is the second in a series of articles on the Philco Scratch Eliminator, one of the most interesting developments to come out of the Philco Engineering Laboratories. You can begin reading below.

Ordinary phonograph reproduction always contains needle-scratch noise, composed of high frequencies which go through the phono amplifier. This high-frequency scratch noise could be easily by-passed by a condenser to ground, except that all the high frequencies of the music would be

pass the scratch noise to ground. At high volume, the bias is great, causing the capacity to decrease, since there is no need for by-passing. See figures 1 and 2.

Variable Mu Necessary

The thing that actually happens when a variable bias is applied to the grid of the tube is that the amplification factor (μ) of the tube is varied. It is interesting to see how this takes place. The grid of a variable- μ tube is wound with varied spacing of the grid wires. The wires are spaced closely together at the top of the tube, and the spacing grad-



lost too. This is why a special circuit, the Philco Scratch Eliminator, was designed.

HF Content Controls Action

As was explained in the previous issue, a variable- μ pentode is used as a variable capacity across the phono amplifier. A negative d-c control voltage, developed from the high-frequency part of the input signal, as explained in the previous issue, is applied to the grid of the pentode, and acts as a variable bias. At low volume, when needle scratch is noticeable, the bias is small, causing the capacity to increase, and by-

ually increases toward the bottom. This means that each part of the grid has a different controlling effect on the electron flow between the cathode and the plate. Each part of the grid may be cut off, that is, the electron flow may be stopped, by a different value of negative bias applied to the grid, as shown in figures 3, 4, and 5.

Bias Controls Mu

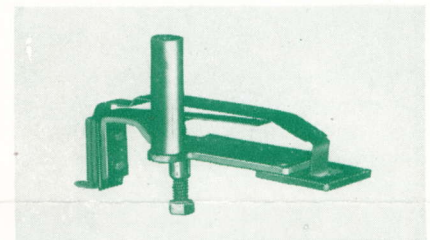
When the bias is zero, the entire grid acts, and has the greatest control over the flow of electrons to the plate. When the bias is increased to a point where part of the grid is cut off, the balance of the grid, because the average spacing between the

(Continued on page 5)

Two New Kits For 1942 Phono Conversion

Two new phonograph conversion kits recently developed for 1942 Philco record changers will continue to be available next year.

One of these kits contains the newly improved trip-pawl contact assembly used in Philco Model M-4 changers. This assembly kit is designed to replace the velocity-type trip-contact assembly used in 1942 Model M-51 changers. The velocity type should be replaced if it develops a chatter after years of use. The assembly kit, Part No. 45-1565, has a list price of \$3.25.

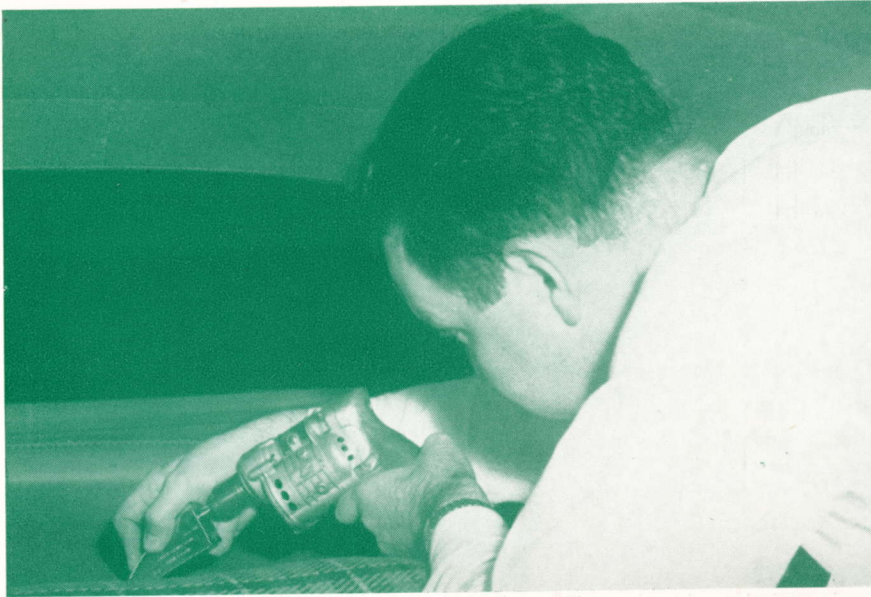


The other new kit contains parts for converting 1942 variable-speed Philco record changers from bell drive to single-speed rim drive. After a long period of use, the "bell" may become worn, causing erratic turn-



ble speed. Replacing the bell drive with the single-speed rim drive kit eliminates this difficulty. The kit, Part No. 45-1496, has a list price of \$2.50.

Both kits contain complete instructions.



SERVICEMEN SUGGEST IDEAS USING PHILCO METAL CUTTER

Reports from Servicemen all over the country tell of new and varied jobs for the Philco Metal Cutter, although it is recommended primarily for the installation of the Model PS-3 rear seat speaker.

Before the Philco metal cutter was available, servicemen had to install a rear seat speaker by drilling and using a hack saw, or by drilling and using a cold chisel, to cut a hole in the metal panel under the shelf.



The Philco Metal Cutter can be used to cut holes of practically any shape in sheet metal up to .040 inch.

Some automobiles have ridges or reinforcement seams on the back shelf, which the Metal Cutter will not cut. In the relatively few cases where this happens, servicemen have suggested drilling several starting holes for the Metal Cutter. Then it is possible to cut most of the hole, and to use a hack saw or cold chisel for the difficult ridge or seam.

Sometimes part of the surface where the hole is to be made is in a corner tough to work in with the metal cutter. Here the problem is

solved simply by going around with the metal cutter as far as possible in one direction, then cutting around in the other direction.

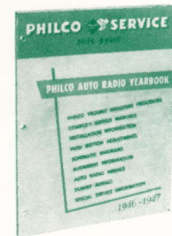
However, most reports say that the Metal Cutter enables installations to be made in less time, and with much neater appearance than with previous methods. And, as with all new tools, after a while we develop a few short cuts of our own.

(Continued on page 7)

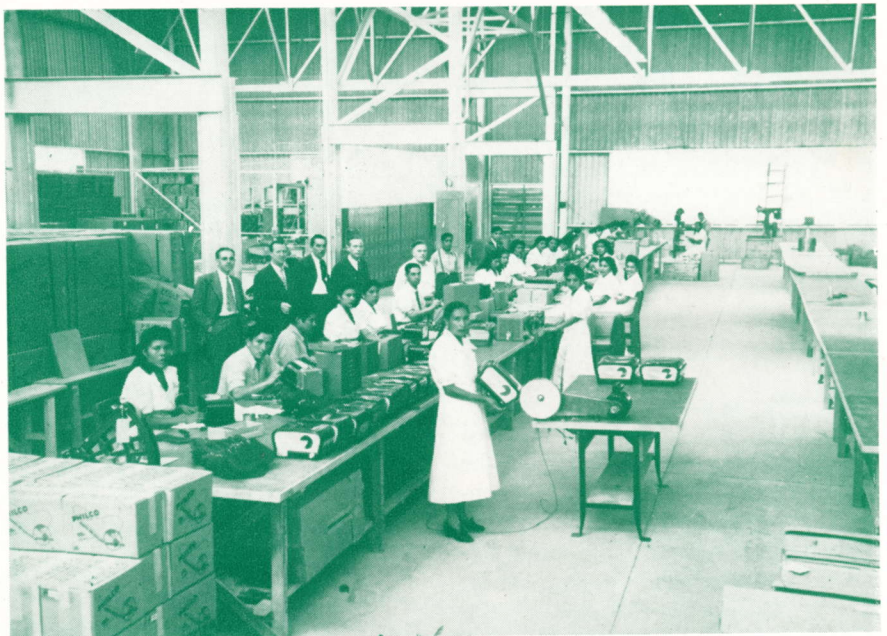
New Yearbook For Auto Radios Released

The first Philco auto radio yearbook since the war, on 1946-1947 Philco auto radios, has been released by Philco Service Division. The form of this yearbook was made to meet the desire of members of Philco Auto Radio Service.

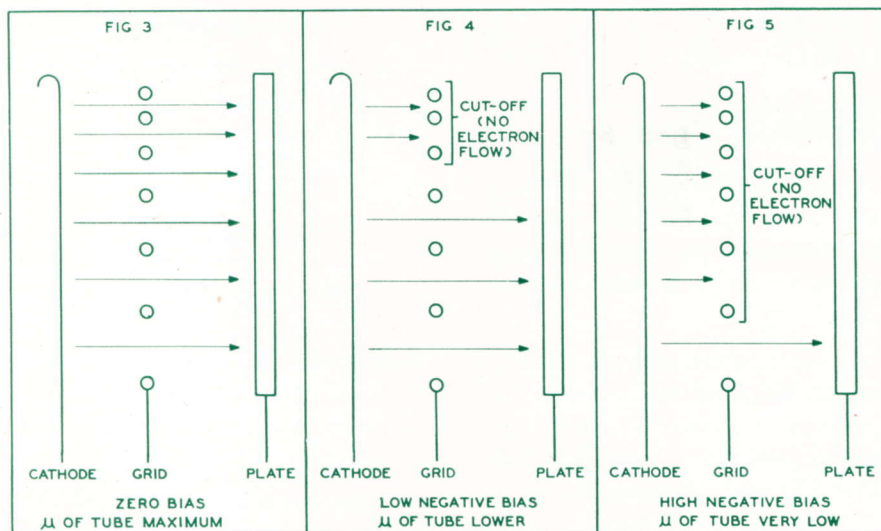
Actually a compilation of the service bulletins issued on Philco auto radios manufactured during 1946-1947, the new yearbook includes latest up-to-date information on the servicing of auto radios, and hints and kinks to speed up such service.



This permanent service manual for your technical library will replace the solder-splattered, dog-eared service bulletins which you have used on your bench these many months. Order one from your Philco distributor today.



MEXICO CITY—The beginnings of a large Philco plant, manufacturing tropic radios, illustrating a part of Philco Corporation's world-wide expansion program.



PHILCO TRAINS 5000 TV MEN

Philco Corporation and 43 of its distributors in "television cities" have provided thorough training courses in television, maintenance and repair to more than 5000 servicemen.

These schools, in 43 principal television cities, are designed to give experienced radio servicemen a thorough understanding of how to adjust and repair television receivers and how to install television antennas for best reception.

Philco Scratch Eliminator . . .

(Continued from page 3)

wires is greater, has less control over the electron flow. In other words, it requires a greater change in grid voltage to cause a given change in plate current. This means that the amplification factor, or μ , of the tube has been decreased. When the entire grid has been cut off, the amplification factor becomes zero, and no plate current can flow.

Input "Reflects" Load

The character of the input impedance of a tube is determined by the character of the output (load) impedance of the tube. When the load impedance of the tube is an inductance or a capacity, the input impedance will be a resistance; when the load impedance is a resistance, the input impedance is a capacity.

In the case of the scratch eliminator, the load impedance is a resistance, as you will see later, and the input impedance, therefore, is a capacity. The amount of input capacity depends upon the amplification factor of the tube as well as the grid-to-cathode capacity and the grid-to-plate capacity. We can vary the amplification factor of the pentode, since it is a variable- μ tube, and thus vary the value of the input capacity of the tube. By using this variable capacity across the phono amplifier, needle scratch is effectively eliminated.

(To Be Continued)

This advertisement appeared in Radio Maintenance—December, 1948
and Radio Retailing—December, 1948

START THE NEW YEAR RIGHT
BUILDING YOUR PARTS PROFITS



PHILCO
PARTS, TUBES, BATTERIES
AND OTHER ACCESSORIES

For the coming year don't guess or gamble—concentrate on the brand you know is first choice with radio owners—Philco, the leader of the industry 18 straight years. Here's your biggest replacement market . . . Philco owners . . . and the surest way to sell it is by featuring Philco parts and accessories. Take advantage of Philco year 'round promotions to get more profitable parts business from Philco owners and from all radio owners, every month of 1949.

Ask Your Philco Distributor

BATTERIES



TUBES



ACCESSORIES



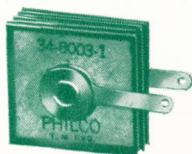
PARTS



SELENIUM RECTIFIERS USED FOR BETTER SET PERFORMANCE

Replace Rectifier Tube in Radios

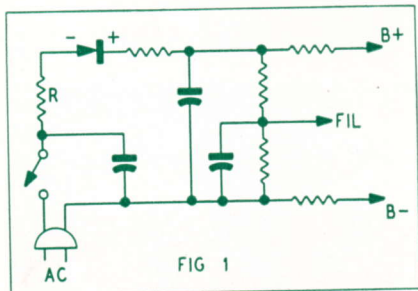
The use of selenium rectifiers has become widespread because of improved operating performance, and instant rectification in AC/DC and AC/DC/Battery radios.



This improvement can be incorporated in older model radios using rectifier tube types 117Z6, 117Z3, or 35Z5 as half-wave rectifiers, or type 25Z5 in voltage-doubler circuits.

Installation Simple

Philco is supplying a selenium rectifier which is designed to replace any of these rectifiers for more efficient operation. Installation involves simply removing the tube and wiring in the unit.



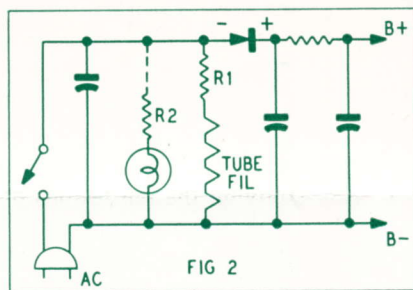
When replacing a type 117Z6 or 117Z3 tube, the circuit will be as shown in figure 1. It is important to remember that a higher B plus voltage is supplied, because the voltage drop across the selenium rectifier is only 5 volts. In the circuit of figure 1, resistor R, having a value of about 27 ohms, should be inserted, so that the filament voltage will be within 10 per cent of the sum of the filament voltages of the other tubes in the set.

Notice that no filament dropping-resistor is needed in figure 1, because the filament of the replaced rectifier tube is not in series with the other tubes.

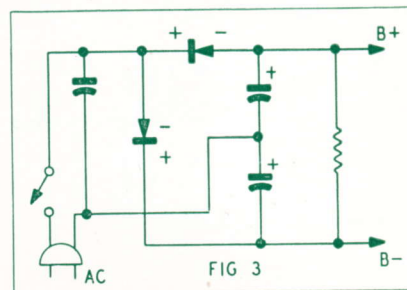
However, when replacing a 35Z5, a resistor, R1, is needed to replace the resistance of the former rectifier tube filament, which was in series with the other filaments. Resistor R1 should be 220 ohms, 5—10 watts.

Resistor Needed

Also, because the 35Z5 has a split filament as a voltage divider for the pilot lamp (or lamps), a resistor, R2,



must be used, unless a 110-volt pilot lamp is used instead. If one #47



lamp is used, R2 should be 800 ohms, 15 watts. If two #47 lamps are used in series, R2 should be 775 ohms, 15 watts.

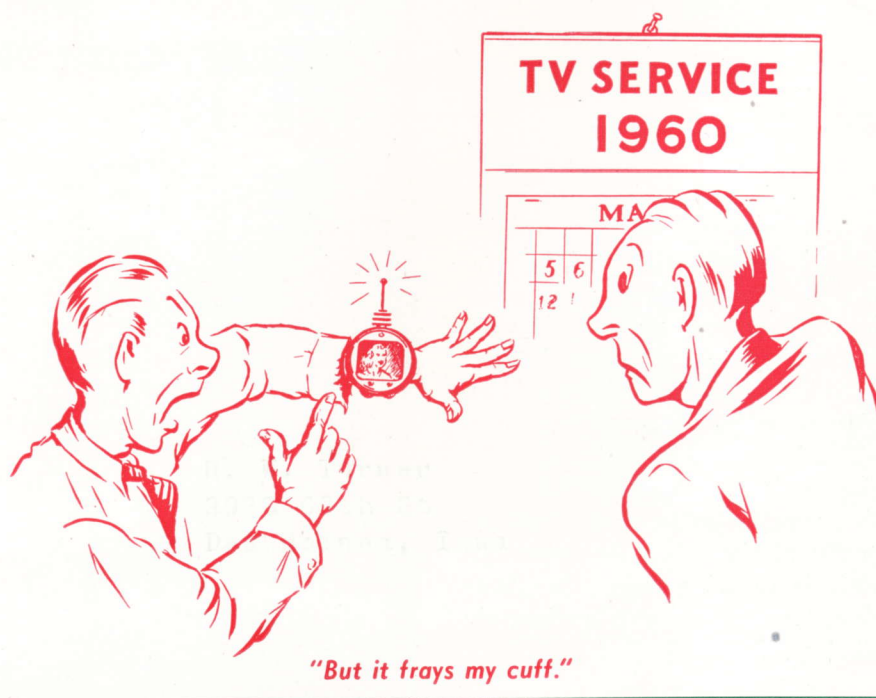
When replacing a voltage-doubler tube, such as a 25Z5, two selenium rectifiers are connected as shown in figure 3.

Terminals Labelled

Polarities are stamped on all Philco selenium rectifiers, leaving no doubt in connecting as shown in the illustrations.

Tested At 900 Volts

Although Philco selenium rectifiers, Part No. 34-8003-1, are designed for operation on 120 volts, ac, they are tested at 900 volts. They have a list price of \$2.25. Complete instructions for quick replacement are included.



"But it frays my cuff."

Philco Expands Service . . .

(Continued from page 2)

they, too, will be in a position to benefit through the ever-growing number of satisfied Philco customers.

Centered In Philadelphia

Organizationally speaking, the auto radio warranty service program is centered in the Service Division of the Philco Corporation, in Philadelphia which, in turn, delegates the territorial responsibility to the various Philco distributors throughout the country. This gives a very closely organized form of operation, since the distributors and the Philadelphia office are thoroughly familiar with the auto radio warranty service stations, through personal contacts and mailings. They know the problems which the members encounter, and provide solutions which are of value to all members.

Servicemen Suggest . . .

(Continued from page 4)

The convenience of the Philco Metal Cutter, Part No. 45-9525, combined with the ingenuity of radio servicemen, are adding up to good reports on this tool from all over the country.

MAKE YOUR START IN TELEVISION—NOW!

The expansion of television continues at such a rapid rate it has left even the most optimistic forecasters breathless. And there is no reason why television reception will not be possible *soon* in *your* part of the country.

It is this rapid expansion that found the main television centers of today without trained servicemen, and led to company-owned service organizations. But it appears that servicemen in areas without television are delaying their study of television. This is actually what caused company-owned service organizations at the beginning!

The future of television service is largely in your hands. If you know nothing about television, if you have no experience with television receivers, you may easily picture your future service business limited to work on \$19.95 radios.

Contact your Philco distributor now and make your application to obtain the first-hand training he will offer as soon as television is within six months of reaching your area. While you are waiting to receive classroom and laboratory training, you should prepare yourself by studying the ten lessons of "Television Trouble Shooting by Philco" now available at your Philco distributor.

Prepare now! Get in on the Philco Training Program! Otherwise you cannot hope to prepare for television service unless you can leave your work for a two year school course.



New Sales Aids for New Year

For increased business during the new year, Philco Service is making available to its members colorful calendar blotters that are both beautiful and eye-catching.

Low cost, effective business-builders, these calendar blotters keep your imprinted name and address constantly before the eyes of people, to sell radio service. Order them from your Philco distributor now.

WANT \$10.00? IT'S YOURS FOR IDEAS PRINTED

Here's your chance to get \$10.00 simply by writing a letter. All you have to do is tell us of a service hint or kink, or about some special use you thought up for any Philco part or accessory.

Or, if you did any kind of promotion which increased your business, that's good for \$10.00 too. Every idea printed rates a check in the mail!

Mr. Fred Marlin, of Joplin, Mo., had his idea of using a Philco FM table-model radio as a converter printed in the November Philco Service and Accessory Merchandiser. And yours may be printed too!

There's plenty you could write about! For instance, new or interesting uses for Philco test equipment offer plenty of possibilities for a ten-dollar check. And speeding up service work to make more money is something we think about all the time.

So write in now! There are \$10.00 checks waiting to be mailed for every idea printed! Address all mail for the Philco Service and Accessory Merchandiser to:

Philco Corporation
P. O. Box 6738
Philadelphia 32, Pa.

Remember!

For the coming year don't guess or gamble—concentrate on the brand you know is first choice with radio owners — Philco, the leader of the industry 18 straight years.

Questions and Answers

Every once in a while in the course of your service or sales activities, you probably have a question for which you can't conveniently find the answer. If such a question involves Philco Service or Philco Parts and Accessories, you've found a source of information right here in the Philco Merchandiser. Any problems on Philco radios, television, refrigerators, freezers, or air conditioners will gladly be answered as specifically as possible in the new feature, "Questions and Answers." Don't hesitate to write if there is some information you desire.

- Q. What method can be used to check the frequency of a local oscillator in a superhet receiver?
- A. It is possible for the oscillator to be operating, yet be off frequency for no reception. The frequency can be checked by using a signal generator and dynamic tester. Small condensers should couple the plate of the oscillator and the generator output to the probe of the dynamic tester. When zero beat is heard on the dynamic tester, the signal generator will be tuned to the same frequency as the oscillator.
- Q. What is the cause of improper operation when a bad 2A4G thyratron tube is replaced in Philco Mystery Control units?
- A. This trouble may happen if the original 2A4G is not replaced by a Philco tube. Sometimes circuits are designed to operate at best efficiency with certain parts, and this is a case showing that the use of Philco replacement parts should be made a habit.
- Q. Are glass tubes replaceable by metal tubes in all radios?
- A. Not in all cases. For instance, in many radios, oscillation results from such substitution because circuit constants are changed, causing the symptom known as "birdies."
- Q. Are there any tricks in checking for refrigerator door seal leaks?
- A. When testing for door seal leaks on refrigerators, the refrigerator light itself may be used instead of placing a lamp and extension cord inside the unit. Simply unscrew the knurled nut on the door switch, and push the switch back out of position. This allows the refrigerator light to stay on when the door is closed.
- Q. Can nationally known brands of polishes and waxes be used on Philco Refrigerator Cabinets?
- A. Not as a rule. Many common household polishes and waxes contain dye or some other ingredient harmful to both lacquer or Dulux finishes. These polishes and waxes are usually used on natural wood and colored finishes, when the affect of the dye or other ingredient is not noticeable. However, on a white refrigerator finish discoloration will result. Only Philco Refrigerator Polish is recommended.

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