

PHILCO SERVICEMAN



RADIO • MANUFACTURERS • SERVICE • NEWS

JULY, 1940

New Tube Tester Eliminates Obsolescence Factor

EDITORIAL

Another Plus for R.M.S.

EVERY month R.M.S. headquarters in Philadelphia receives hundreds of new names to be added to the Radio Manufacturers Service membership list. There are also received each month many names to be taken off the list, but the overall membership is constantly growing. Old members who are active in the radio service business are benefited by their association with Radio Manufacturers Service. New members who are just entering the service business find that R.M.S. is most helpful to them in conducting their new enterprise. Members who are no longer actively engaged in service work are the ones whose names are being withdrawn. Over a twelve-month period consistently year in and year out, the membership of Radio Manufacturers Service is increasing because of the tremendous amount of good which R.M.S. is doing in the service industry.

Look for the Emblem

This year PHILCO goes one better for the R.M.S. man and is making it possible for him to get more service business than ever before. On the inside of the cabinet or on the backs of the cabinets in the case of the small sets, there appears on all 1941 PHILCO radio models a yellow label bearing the R.M.S. insignia and telling the customer "Should your PHILCO ever require service, call a member of Radio Manufacturers Service. Guaranteed work, genuine PHILCO tubes and parts, standard prices". Under the R.M.S. emblem is the wording "Look for this emblem in your neighborhood".

Free Advertising

No other manufacturer in the radio industry has ever offered such direct and effective help to the serviceman. If you are a member of Radio Manufacturers Service and you have not identified your shop or your service headquarters with the R.M.S. sign, you are losing a splendid opportunity to cash in on some of this free advertising promotional work which PHILCO is doing for you.

Features Merchandising Appeal With Accurate Testing

PHILCO has just introduced a new tube tester which already promises to be the most popular and the fastest-selling tube tester and tube merchandiser on the market.

In line with PHILCO'S policy of making all test equipment basic so that it does not become obsolete, the new Model 050 is the first quality tube tester to be introduced which is completely basic in design so that it will never be out of date.

Never Obsolete

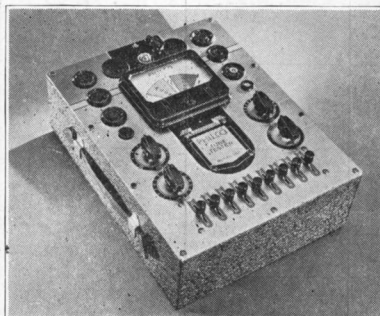
The test buttons or switches are so arranged that they can be connected to the terminals in the socket in any possible combination; thus the tester can be used on all types of tubes both present and future regardless of the arrangement of the elements with respect to the socket terminals. Two blanks are provided in the tester panel for the addition of extra sockets should these ever be required in the future.

Simple Operation

The new tester is extremely simple in operation and affords an excellent means of showing the customer the exact condition of the tube. The meter is calibrated in three sections of "Poor", "Questionable", and "Good". A complete and handy chart is supplied with the tester to show the exact settings of the controls for each type tube now on the market including the new PHILCO XXL and XXD.

Low Price

Best of all, the price of the Model 050 tube tester is low—only \$34.50 net to the serviceman and dealer. The Model 050 is another in the long line of PHILCO engineering achievements. It is a tube tester which the dealer will use for years because it is entirely free from obsolescence.



PHILCO Tube Tester Model 050.

Philco Merchandise Display—New Sales Maker



HERE is a silent salesman for your store that works without pay—an attractive sales-compelling display of packaged merchandise, all bearing the famous PHILCO name. These items sell on sight and every customer who enters the store has immediate need for one or more of the articles displayed.

All are household items which are used every day in every home. The floor traffic which these repeat sale products will bring is invaluable to the radio and refrigeration dealer.

The display stand is sturdily built and takes up but little space, requiring only 1 3/4 square feet of floor area. It measures 58" high, 20 1/2" wide, and 12" deep. The price strips on the shelves are easily removed so that strips covering new products which will be supplied from time to time can be inserted. See your PHILCO distributor for special price on complete assortment of accessories including this durable display.

Aligning R.F. and I.F. Compensators

Philco Models 41-81, 41-83, 41-84, 41-85, PT-87, PT-89

Equipment Required

1. SIGNAL GENERATOR, such as PHILCO Model 077 A.C. operated or Model 177 battery operated. These signal generators cover a frequency range from 115 to 36,000 K.C.

2. INDICATING DEVICE: To obtain maximum signal strength and accurate adjustment of the padders a vacuum tube voltmeter similar to PHILCO Models 027 and 028 is recommended. These instruments also contain an audio output meter which may be used as an indicating device. The method of connecting either of these instruments is listed below.

3. ALIGNING TOOLS: Fiber handle screwdriver, PHILCO Part No. 45-2610.

Connecting the Aligning Meters

AUDIO OUTPUT METER: If an audio output meter is used, connect it across the plate and screen terminals of the output tubes. Adjust the meters to use the 0 to 10 scale.

VACUUM TUBE VOLTMETER: If a vacuum tube voltmeter is used as

an aligning indicator, the negative (—) terminal is connected to the A.V.C. circuit of the receiver through a 2 megohm resistor. The positive (+) terminal is connected to the chassis or ground.

SIGNAL GENERATOR: When adjusting the "I.F." padders the high side of the signal generator is connected through a .1 mfd. condenser to the loop tuning condenser stator lug which connects to the grid of the first detector oscillator tube. The ground or low side of the signal generator is connected to the chassis of the receiver.

When aligning the R.F. padders a loop aerial is made from a few turns of wire and connected to the signal generator output terminals. The signal generator is then placed a few feet from the set. The loop aerial of the receiver should be assembled in the cabinet, together with the battery when adjusting the R.F. padders.

In order to adjust the "R.F." padders correctly on Model PT-89, the carrying strap which contains the loop should be held in an upright position.

The R.F. and I.F. compensators locations on these models are shown in Figs. A, B, C, D.

NOTE A: DIAL CALIBRATION: Before adjusting the R.F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity) set the dial pointer on the small dot below 550 K.C.

NOTE B: When adjusting compensator be sure to tune in the fundamental signal (15 M.C.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning dial 910 K.C. below the fundamental signal, which will be 14,090 M.C.

Locations of Compensators
Models 41-81, 41-83, PT-87

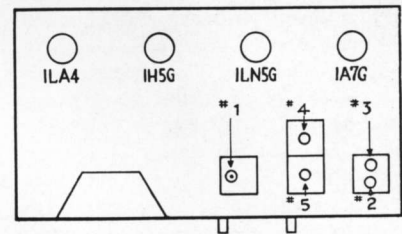


FIG. A

Locations of Compensators
Model 41-84

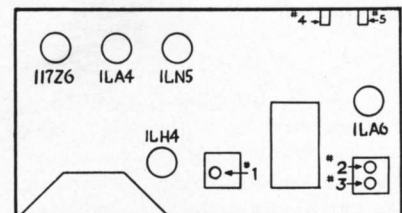


FIG. B

Locations of Compensators
Model 41-85

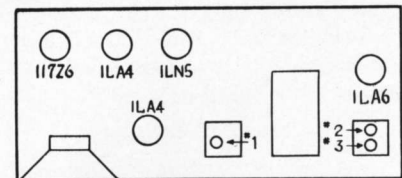
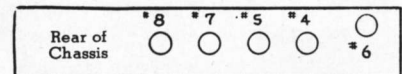


FIG. C

Locations of Compensators
Model PT-89

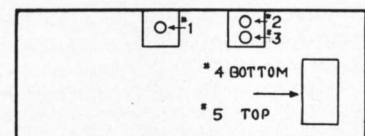


FIG. D

Models 41-81, 41-83, 41-84, Codes 121 and 122; PT-87, PT-89

The Model 41-84 receiver may be adjusted when operated by battery or 115 V. A.C.-D.C. power.

Operations in Order	Signal Generator		Receiver			Special Instruction
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1.	See Paragraph on Signal Generator above	455 K.C.	540 K.C.	Vol. Max.	#1, #2, #3	See Figs. A, B, D for padder locations
2.	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.	#4 Osc. #5 Aerial	Note A

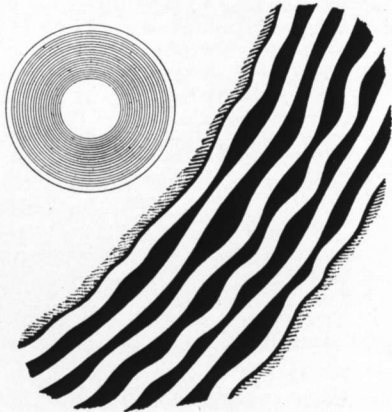
Procedure Model 41-85

This receiver may be adjusted when operated by Batteries or 115 A.C.-D.C. power.

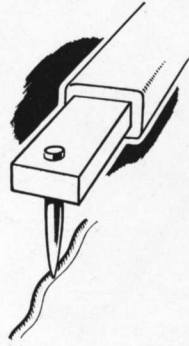
1.—	Stator plate lug loop tuning condenser	455 K.C.	540 K.C.	Vol. Max.	#1, #2, #3 See Fig. C for padder location
2.—	Loop on Generator	1500 K.C.	1500 K.C.	Range Switch "Broadcast" Vol. Max.	#4 Osc. #5 Aerial Note A
3.—	Loop on Generator	580 K.C.	580 K.C.	Range Switch "Broadcast" Vol. Max.	#6 Nut
4.—		Recheck	operation	No. "2"	
5.—	Loop on Generator	15 M.C.	15 M.C.	Range Switch Short Wave	#7 Osc. #8 Aerial Note B Correct Peak

PHILCO PHONOGRAPH REPRODUCES SOUND ON A BEAM OF LIGHT

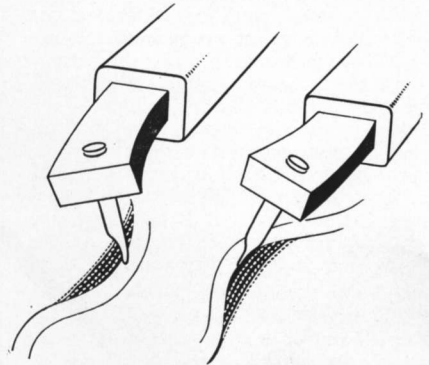
Revolutionary Invention Uses Modern Scientific Discoveries



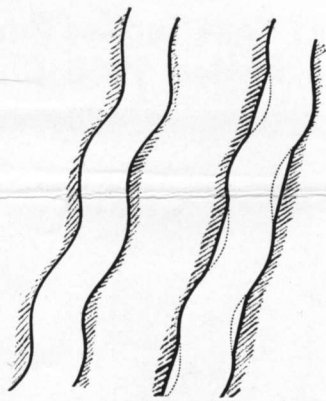
1. The Grooves of a Phonograph Record Greatly Magnified.



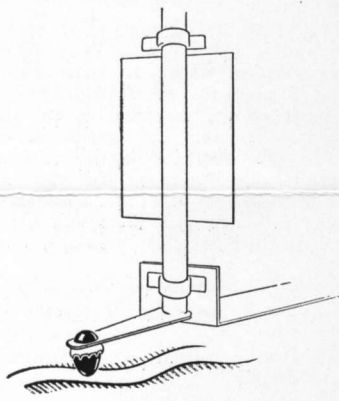
2. Close-up of an ordinary old-fashioned Hard Steel Needle fixed rigidly in a Slab of Crystal. The Needle is firmly held in the Tone Arm and produces sound by laboriously twisting the crystal.



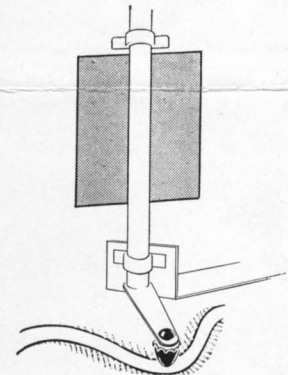
3. When a fixed steel needle travels in the groove of a Phonograph Record, the needle twists and left . . . as much as 4,000 times every second! Grinding work, that destroys the needle . . . gouges and tears the record grooves! Result . . . the needle is worn out! . . . the record is worn out!



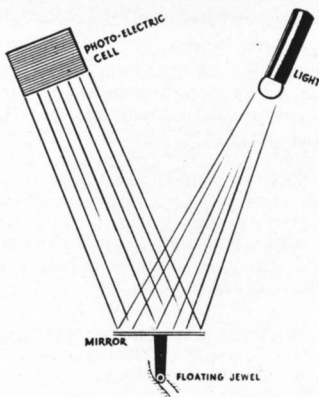
4. The groove of a record in perfect condition is a flowing, wavy curve. After wear, through the grinding action of a steel needle, the protruding sides of the curves are flattened out.



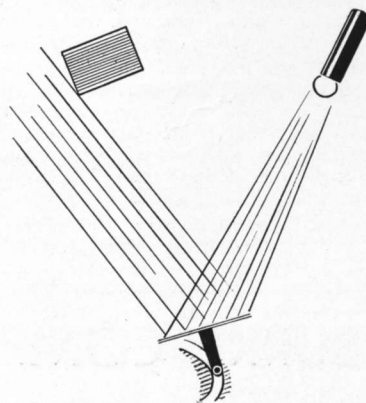
5. Here's how Philco engineers have done away with this work and wear. Instead of a rigidly fixed needle, a freely pivoting rod is mounted at the end of the tone arm. Where it contacts the record, a rounded jewel is set. This jewel floats gently in the groove of the record, swinging the rod back and forth easily and without effort.



6. On this pivoting rod, a featherweight mirror is mounted. As the jewel floats from side to side in the record groove, gently moving the rod back and forth, the mirror turns in unison with the rod.



7. Here's how Philco engineers have applied a new principle to record reproduction. For the first time, instead of creating sound through vibrating a hard crystal, these sound vibrations are reflected by a mirror on a beam of light to a photo-electric cell.



8. As the mirror turns, a beam of light moves back and forth across the photo-electric cell. The degree of turn, from entirely on to entirely off, produces the variations of tones.



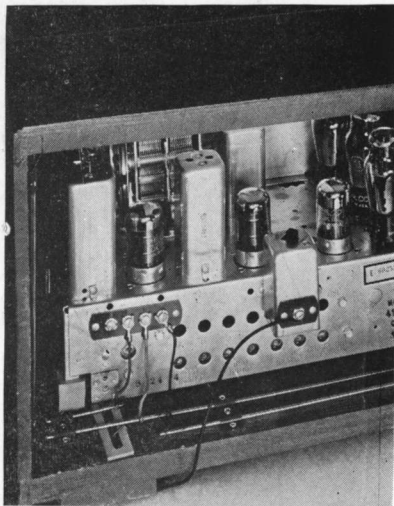
9. . . . Showing the location of the light, the mirror and the photo-electric cell in the PHILCO PHOTO-ELECTRIC REPRODUCER.

Aerial Coupler Simplifies Operation and Servicing

THE new PHILCO Aerial Coupler, which is a part of the 1941 PHILCO Outdoor Aerial, eliminates all necessity for wave traps or other such devices which might produce interference and cross modulation when the stronger signals are introduced. An on-off switch makes it possible to employ the Outdoor Aerial during the daytime when strong signal pick-up is required, and to use the Built-in Loop Aerial of the new sets at night when signal strength is higher. It is only necessary to snap the switch on the back of the coupler in order to disconnect the Outdoor Aerial from the receiver.

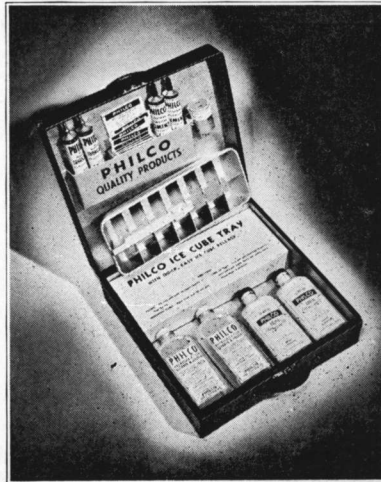
Dealers and servicemen will need the aerial coupler which is also sold separately. When testing the new chassis on the service bench, it is difficult to have a loop aerial of each type in order to make service and alignment adjustments. By means of the new aerial coupler, one safety aerial installed outside can be used for all of the new sets when making these adjustments. The coupler simply plugs into a socket conveniently located on the back of the chassis. A screw terminal is provided on the coupler for connection of the lead-in wire from the safety aerial.

The new aerial coupler is known as PHILCO Part No. 76-1134 and sells at a list price of \$1.50.



Showing Aerial Coupler Installed on 1941 PHILCO

NEW PROFIT IDEA! FOR SERVICEMEN



PHILCO now makes it possible for the serviceman to do additional sales work with practically no selling effort on his part.

The PHILCO sample case is attractive and it helps you make profitable sales on every service or repair call. It is only necessary to display the case in front of the customer at the time you are making the repair in the home. The PHILCO quality products which are contained in this case will sell themselves on practically every service call. Here is what you get in the PHILCO Serviceman's Sample Case:

- 2 Quick Release Ice Cube Trays
- 2 Bottles PHILCO Furniture Polish
- 2 Bottles PHILCO Refrigerator Polish
- 2 Tubes Household Cement
- 2 Tubes PHILCO Lubricator
- 1 Interference Filter
- 10 Packages PHILCO Phonograph Needles
- 1 Long-Playing Needle

Your cost of the complete sample kit is only \$9.27, which is the exact cost of the contents. The case you receive free. Your selling price for the contents is \$15.45.

Every service call can be made the source of extra profit for you. The only thing that is necessary is to carry these samples with you when you make a service call in the home. Try it and you will be surprised how quickly it will be necessary to renew the contents of the PHILCO Sample Case.

Dial Scales Facilitate Alignment Adjustments

SOME of the 1941 model PHILCO radios have the dial scale attached to the cabinet instead of to the chassis. When the chassis is out of the cabinet for servicing, it is necessary to have an additional scale in order to make the alignment adjustments.

For this purpose, PHILCO has supplied four printed cardboard dial scales which can be placed on the chassis supplementing the regular scale which is a part of the cabinet assembly. These paper scales are as follows:

Scale Part No.	Set Model No.
45-2819	41-230, 41-235
45-2821	41-240, 41-245
45-2825	41-260
45-2826	41-265

Dealers and servicemen who have occasion to service the new 1941 models can obtain these special scales from the PHILCO distributor.

237 Page Service Book on Philco 1940 Line



This big 237-page book contains complete service information on every home set and every auto radio including car manufacturers' models built during the 1940 season. The book has schematic wiring diagrams of every model, alignment instructions, replacement parts lists and prices, production changes, setting push-button tuning and adjusting automatic phonograph record changers now in stock at the PHILCO distributors.

J. H. BURKE COMPANY

674 Commonwealth Avenue

Boston, Mass.

PHONE, KENMORE 3170

EDWARD F. O'DONNELL, Service Manager