

PHILCO SERVICEMAN

Circulation, Over 30,000 Copies Monthly



RADIO • MANUFACTURERS • SERVICE • NEWS



APRIL, 1935

Editorial

The Radio Owner Does Not Know You

DURING the past eighteen months a tremendous amount of advertising material has been made available to all members of Radio Manufacturers Service. This material has consisted of hand bills, direct-mail letters, folders, newspaper ads, envelope stuffers and many other sales-promotion aids.

Millions of pieces of this material have been used by Radio Manufacturers Service members in all parts of the country.

Even with all this publicity of Radio Manufacturers Service on the part of the members the question most frequently asked by a radio owner today is "Where can I find a good serviceman?"

As you know, the PHILCO radio owners are all told in their instruction sheet that when their radio requires service they should call a member of Radio Manufacturers Service. Naturally the owner, when he sees this notice and when the time comes when his radio does need service, would prefer to follow the set manufacturer's instructions and call a Radio Manufacturers Service member than to call anyone else.

Thousands of R. M. S. members have failed to cash in on the tremendous amount of R. M. S. publicity which is reaching the public every day. By far the largest service advertising campaign ever attempted has actually been going on during the past year for the benefit of R. M. S. members. At Radio Manufacturers Service headquarters we can only go so far in this work. We can and are telling millions of radio set owners that when their radio requires service they should call an R. M. S. member. The rest of the responsibility is entirely up to the individual members.

Almost without exception there are a large number of radio owners in every R. M. S. member's community that right now are in the market for radio service, but do not know whom to call in order to get this service.

The majority of these radio set owners do know that an R. M. S. man would do the best job. Their difficulty is in not knowing where to find the R. M. S. man.

We strongly recommend that you make a quick survey in your own neighborhood and actually ask the radio owners if they know that you are the Radio Manufacturers Service representative who has been selected and recommended by the PHILCO Radio Company to do service work on all makes of radios. We are confident that the results of this survey will open your eyes to the condition which exists.

You know what the problem is. No amount of publicity on our part can tell your neighbors that you are one of these highly trained and PHILCO-recommended servicemen and, therefore, this national publicity will not get you business unless you put forth an effort on your part.

The Philco Three-Purpose Antenna Without a Ground

IN MANY locations, particularly in the rural districts and small towns, it has been found impossible to use a high ground connection on the roof or at some other high level, as recommended for the PHILCO Three-Purpose Antenna System. These locations have possibly experienced considerable noise from man-made static, but it has been difficult to eliminate this condition because the antenna system could not be properly installed.

In the majority of these cases it will be found possible to install the aerial at the back of the house rather than from one end of the roof to the other. In this case, a counterpoise, which is simply another wire connected between the supporting poles of the antenna and placed a few inches above the ground and used as a ground connection, will afford excellent results. So far as the radio frequency signals are concerned, a ground of this type is just as effective as a standard ground and will afford noise-free reception, due to the fact that the aerial is located at a distance from the house or the wiring in the front of the house, where interference is greatest.

Philco 048 Cases Available

A NUMBER of servicemen have asked if they can purchase the case only of the PHILCO 048 or 048A testers. Many of these men have used their 048 for a long period of time, and although the tester is still in perfect condition, the case has become badly worn. A number of men have also had the idea of using these cases for tool boxes.

The leather-covered case of the Model 048 is available through your PHILCO distributor at \$6.50 list (Part No. 10011). The new walnut case with the metal corners, for the Model 048A, is available at \$15 (Part No. 10151A). Both of these items are subject to your regular parts discount.



R. M. S. Service Meeting, February, 1935, Held by Harry Moll, Inc., PHILCO Distributors in Denver.

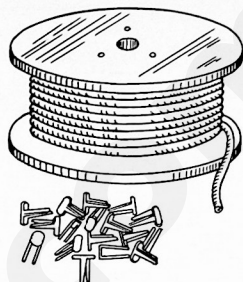
Adopt every means available for telling each and every radio owner in your community, not once but repeatedly, that you are the R. M. S. member they have been hearing about. Your business and, therefore, your profits will increase in proportion to the amount of effort you put on this.

Adjusting Dial Drive—New Drive Cable

IN A previous issue of the PHILCO SERVICEMAN we called attention to the method of adjusting tight rotors in tuning condensers by loosening the adjusting screw at the back of the condenser. Some servicemen have taken this suggestion too literally and have loosened the screw to the extent that the condenser comes out of adjustment, and in some cases the plates of the rotor touch the stator. This adjustment should be made only when the rotor is so tight that the dial drive cannot possibly move the rotor plates. In the March issue of the PHILCO SERVICEMAN we showed the adjustment of the hex nuts controlling the tension of the coil spring. In practically all cases, it will be found that any dial-drive slipping is caused either by improper adjustment at this point or by the use of the wrong type dial-drive cord.

PHILCO has received many requests from servicemen and dealers for a convenient spool of the newly developed dial-drive cord. This new white cord, which is now being used on all current PHILCO models employing the cord drive, is available to servicemen in a convenient 25-foot spool. The cord on the spool is

known as PHILCO Part No. 45-1135, and sells at \$1.25 list. This arrangement is particularly convenient, because this type of drive cord can be used on all models and is not limited necessarily to PHILCO. Thirty metal clasps are provided with each spool, so that the serviceman can make the necessary loops at the end of the cord.



New PHILCO Dial-Drive Cable Now Available in Handy 25-Foot Spools.



BOAKE CARTER'S R. M. S. BROADCASTS

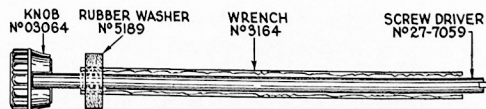
Every week Boake Carter is advancing the cause of R. M. S. Here is what he said on March 12:

"But speaking of people and uniforms, there are 12,000 Radio Manufacturers Servicemen throughout the country, PHILCO servicemen, PHILCO trained. They know their jobs. They are experts in fixing up any kind of a radio set. Anybody who owns a radio wants and should get the best out of it at all times. Yet thousands are afraid to ask a serviceman in because they don't know whom to trust or what they'll have to pay. PHILCO's servicemen—and any PHILCO dealer will get you one—are honest; they'll tell you what's wrong first, tell you how much it'll cost first and then do the job properly. You'll find them in every city—and they are good, safe men, these fellows."



Combining Philco Adjustment Tools

A CONVENIENT arrangement of the PHILCO fiber adjusting wrench and the fiber adjusting screw driver is illustrated on this page. One end of the adjusting screw driver is filed to a flat, similar to the PHILCO control shafts, and a standard PHILCO knob is placed on this flat. The screw driver is then inserted through the hole of a shortened adjusting wrench, on one end of which is placed the standard PHILCO rubber mounting washer. This combination is particularly useful in adjusting those PHILCO compensating condensers which combine the slotted screw and the hex nut, both primary and secondary, in one assembly. If the length is made short enough, this tool can be used in a small space, such as in the Model 45C



cabinet, thus making it possible to adjust the compensating condensers without the necessity of removing the chassis from the cabinet.

The PHILCO fiber adjusting wrench is known as PHILCO Part No. 3164, and sells at a list price of 20c. The fiber screw driver, with a $\frac{1}{8}$ -inch steel blade, is known as Part No. 27-7059, and sells at a list price of 60c. Both of these items can be obtained from your PHILCO distributor at your regular parts discount.

PHILCO RADIO & TELEVISION CORPORATION

PHILCO
REGISTERED
DIAMOND GRID
BATTERIES

MAIN OFFICE
TIOGA AND C STREETS

PHILADELPHIA, PA.

PHILCO
REGISTERED
BALANCED UNIT
RADIO

April 4, 1935.

TO ALL PHILCO DEALERS AND SERVICEMEN:

In this issue of the PHILCO SERVICEMAN is a copy of one of Boake Carter's talks telling the public about Radio Manufacturers Service.

In the editorial on page one emphasis is placed on the fact that the public wants radio service and does not know where to get it.

Philco, through Radio Manufacturers Service, has built up in the past year the thought in the minds of the public that when their radio needs service they should call a member of Radio Manufacturers Service.

Hundreds of thousands of radio sets today are in the need of service but are sitting idle because the owner does not know of a dependable man to call in. In many cases this owner has heard of Radio Manufacturers Service and would call in a member of R.M.S. if he knew of one.

Every serviceman should use all the display material possible, and all the advertising plans available, to let the public in his neighborhood know that he is a member of Radio Manufacturers Service.

Every radio dealer should have his own servicemen join R.M.S. immediately if they are not now members. The dealer should then advertise the fact, both by signs in his store and by means of newspapers, handbills, mailings and other ways, that his servicemen are members of R.M.S., that they have been approved and recommended by Philco, - the world's largest radio manufacturer.

The independent serviceman, by co-operating with R.M.S. publicity, can positively increase his service business and, therefore, increase his profits.

The radio dealer, using R.M.S. men in his service department and using R.M.S. publicity to build up his service work, will not only benefit through his service department but will develop many leads which will result in radio set and tube sales.

Very truly yours,

PHILCO RADIO AND TELEVISION CORPORATION

Robert F. Herrick

MANAGER
PARTS AND SALES DIVISION

Better Aerials for Improved Standards of Reception

DURING the past three years, there have been many talks and articles on the subject of aerials. Some of these have been very good, from the engineering standpoint, and have given valuable technical information. Frankly, they have not done much good so far as overcoming general receiving conditions is concerned, because too much emphasis has been placed upon the technical aspects of why and how the aerial system works instead of what it will do in terms of performance for the customer. If the customer has noise, he does not care whether that noise comes from aerial pick-up or whether it comes from within the radio set. It is noise to him, and it spoils his radio reception. A good aerial installation will give 40 per cent improvement in performance and noise reduction.

One of the main things that you are interested in is whether or not the system can be installed easily. Can you do it in an hour's or five hours' time? You also want to know if soldering is necessary on the roof, because if it is you are about ready to give up before you ever start the job. The most important thing that you want to know is the performance, and the best way that this point can be shown is for you to look around in your neighborhood or town at some of the outstanding installations of the PHILCO All-Wave Antenna System already made.

The next thing you want to know are the troubles which you might expect. If you try to substitute cheap transmission wire instead of the wire which comes with the kit, in two months' time the wire will have absorbed so much moisture that it will be useless. If you use steel poles on the roof, and you run the wire within a few inches of the poles, you might as well put the wire on the roof and be done with it, because it is essentially the same thing. You must bear in mind also the fact that the horizontal portion of the wire must be taken out of the noise field as much as possible. This applies particularly to the short section, because it is this end which is most responsive to the high frequencies, and, as you know, more noise of the man-made static variety is present on the higher radio frequencies than on the lower frequencies.

The question comes up—"Will people buy the various aerial systems on the market?" Many dealers say "No," because it raises the price of the radio set too much, and the dealer is actually afraid to push the aerial proposition for this reason. He does not like the idea of adding 10 per cent to the cost of the radio, and yet, in most cases, that 10 per cent would be well worth the difference to the dealer in performance and in savings of service costs. Why is it that so many of the car manufac-

Continued on Page 4

Big R. M. S. Mailing Just Completed

ONE of the finest service mailings ever to be sent out by a manufacturer has just been completed by Radio Manufacturers Service headquarters in Philadelphia. Over 12,000 members of Radio Manufacturers Service throughout the world have received a direct mailing from R. M. S. headquarters containing up-to-date information which is invaluable to the serviceman.

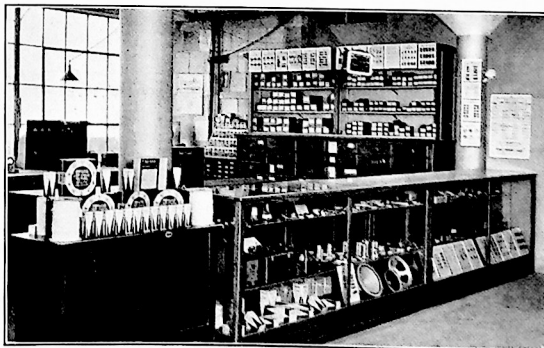
The following is a list of the materials which have been sent to every member:

1. A personal letter about Radio Manufacturers Service.
2. A copy of the instruction sheet containing the R. M. S. service paragraph and the R. M. S. insignia.
3. A typical page from the parts catalogue.
4. Changes bulletin covering every circuit and part number change since the various Service Bulletins of the current PHILCO line were issued.
5. Sample of new envelope stuffer on the R. M. S. standard tune-up.
6. Sample of envelope stuffer on the new PHILCO All-Wave Aerial.

A mailing of this type is somewhat of an innovation, since it is the first time any manufacturer has ever attempted to make such a large direct-service mailing of this kind. The changes bulletin enables every R. M. S. member to have the latest and most up-to-date information on all current PHILCO models, and when used in conjunction with the

PHILCO Service Bulletins, tens of thousands of which have already been distributed to servicemen and dealers, the R. M. S. member is in a position to give the finest possible service on all PHILCO receivers.

R. M. S. members everywhere have been most enthusiastic about the new material, because it enables them to do a better service job and make more money.



Parts Department, Adleta Showcase and Fixture Mfg. Co., PHILCO Distributors in Dallas, Tex.

Questions and Answers

1. Q. What causes intermittent operation of the PHILCO 024 Signal Generator?

A. In some cases it has been found that the metal can which holds the "A" cell in position has become loose and does not make a good contact with the metal container of the 024. This causes intermittent operation and also a variation in pitch of the signal from the signal generator. This condition can be corrected by tapping the edges of the battery container carefully so as to make better contact between the can and the 024 case.

2. Q. What is a possible cause of oscillation in the PHILCO Model 38 battery receiver?

A. This difficulty is sometimes caused by variation in the screen grid resistor in the second detector circuit (No. 21 in the diagram of Service Bulletin No. 166) from its original value of .5 megohms to 400,000 or 350,000 ohms. By correcting the low value of this resistor, normal operation is restored.

3. Q. Is there any connection between a corroded battery cable and burned-out tubes in a battery receiver?

A. Yes. Great care should always be observed to keep the battery cable away from the storage cell so that corrosion will not start in the cable. Many cases have been reported where the battery cable corroded to such an extent that high-voltage "B" leads shorted against the "A" leads and thus burned out a complete set of tubes.

4. Q. What is the cause of resistors changing value in a radio set?

A. The chemical construction of cheap resistors is such that a change in resistance value can take place with changes in humidity, temperature and age. Unless the finest materials are used for making up resistors, there is always the possibility of such changes taking place and causing any number of freak types of performance in the receiver. PHILCO uses only the best grade of resistors, and the result is that there is rarely a change of this type in a PHILCO receiver. Many cheap sets employ cheap resistors, and many servicemen, looking for bargains, buy such cheap resistors for replacement purposes. Resistors of this type are invariably false economy, because they never give correct performance.

5. Q. Why does the automatic volume control stop working when certain resistors change their value considerably?

A. The automatic volume control action depends upon the maintenance of a definite grid bias voltage, and the addition or subtraction from this level for constant volume. If a resistor such as described in question 4 above, which deter-

mines the normal grid bias voltage changes in resistance value, the added or subtracted voltage may not be of the proper value to operate the automatic volume control correctly. The result is that improper action takes place, and the customer complains of faulty performance in the receiver.

6. Q. Why does PHILCO use odd resistance values, such as 490,000 ohms, instead of 500,000 ohms, and 99,000 ohms instead of 100,000 ohms, etc.?

A. All of these odd values are within commercial tolerances for a broadcast receiver. In other words, the 99,000-ohm resistor varies from the 100,000-ohm resistor only by 1 per cent. The 490,000-ohm resistor varies from the 500,000-ohm resistor only by 2 per cent. The reason for these odd values is the fact that the color coding of the odd-value resistors shows itself more readily under the mercury-vapor lighting used in the PHILCO factory than the standard color coding of the even-value resistors. In this way there is far less tendency on the part of any factory operator to insert the wrong resistor in a given position.

7. Q. Why does the length of the transmission lead-in wire in the PHILCO Three-Purpose and All-Wave Antenna Systems have relatively little effect upon performance?

A. Although it is a known fact that the impedance of a line changes with length, the PHILCO antenna systems have been designed in such a manner that there is a fairly wide range of impedance over which the system will operate. In the case of the Three-Purpose Antenna System, the length can be extended up to 400 feet without any ill effect upon the performance. In the case of the All-Wave Antenna System, it is recommended that the length of the lead-in be no greater than 200 feet. Noticeable loss in efficiency results if the lead-in is extended beyond this length.

8. Q. Why does PHILCO tap the flat top off center in the All-Wave Antenna System when nearly all manufacturers tell the servicemen that the greatest voltage can be obtained from the exact center?

A. As explained in the February issue of the PHILCO SERVICEMAN, the PHILCO All-Wave Antenna System comprises a group of resonant circuits which are responsive to various frequency bands within the short-wave ranges, as well as complete frequency response in the broadcast band. The PHILCO system is not a doublet antenna system and, therefore, does not depend upon creating a voltage at the exact center of the flat top. The PHILCO system operates on an entirely different principle, and the highest possible efficiency is obtained by having the large group of resonant circuits so that there will be overlapping ranges of resonant response over the entire short-wave and broadcast bands.

Better Aerials—Continued from Page 3

turers are now equipping a large percentage of their new cars at the factory with automobile radios? Certainly the automobile radio doesn't add one bit to the performance of the car, and yet in a home radio installation an All-Wave Aerial, which represents roughly the same proportion of the cost as the radio in the car, will positively improve the performance of the radio set by 40 to 50 per cent.

You may ask if the public is ready for the purchase of such aerial installations. You know that

there has been much publicity on the subject, and certainly PHILCO is doing its part to help in this general improvement of radio reception. In the instruction sheet of approximately two million PHILCO radio sets, which have gone out from the factory recently, we have recommended to the customer the use of an All-Wave Aerial or the Three-Purpose Aerial for improved performance.

Your PHILCO distributor can tell you about the many R. M. S. helps which have been prepared to get you more business and which are referred to in the editorial on the first page.

JAS. S. REMICK CO., INC.

909 Twelfth Street

Sacramento, Cal.