

PHILCO SERVICEMAN

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RADIO · MANUFACTURERS · SERVICE · NEWS



FEBRUARY, 1935

Editorial

THE activities of Radio Manufacturers Service during the past eighteen months have been of untold benefit to the servicemen. R. M. S. is accomplishing its two major purposes, which are to get more service jobs for members and to help them make more money.

With over 12,000 certified members today, Radio Manufacturers Service has grown to be a tremendous force working for the benefit of the entire service industry.

The point we want to emphasize just as strongly as possible is that being a member of Radio Manufacturers Service will not be of the slightest help to any serviceman unless that man makes use of the different plans that are available.

Every radio serviceman should carefully consider and answer the following questions to himself:

1. Will the public have more confidence in a serviceman who is an authorized member of a national service organization advertised over chain broadcasting programs and sponsored by the world's largest radio manufacturer?

2. What effect would continuous newspaper advertising regarding the honesty and dependability of this service organization have on the individual members?

3. What effect would hundreds of handbills distributed in each member's neighborhood have on that member's business if these handbills were also tied in with the local newspaper and the national broadcasting advertising?

4. What effect would window signs, which told the public that the serviceman was a member of Radio Manufacturers Service, have on that member's business?

The answers to these four questions and many similar ones which could be added would obviously be that the effect of these helps on the members' business would be to increase it at a steady rate.

No amount of Radio Manufacturers Service advertising can help the individual members unless they keep pounding away day after day to everyone in their neighborhood that they are the representative of Radio Manufacturers Service in their community.

If you do not take advantage of the vast advertising and publicity campaign which is being conducted for the benefit of Radio Manufacturers Service, you are losing the greatest opportunity you have ever had to build up your service business to a point where it is profitable and permanent.

Testing and Installing the New Philco All-Wave Aerial System

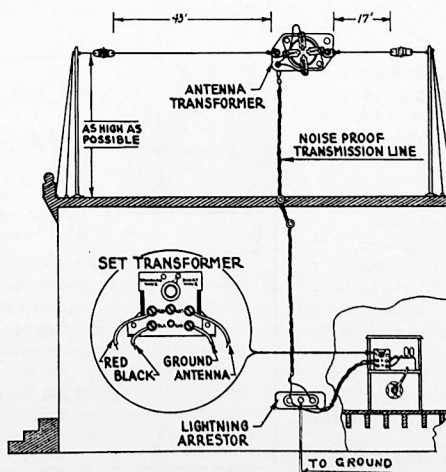
THE PHILCO All-Wave Aerial is a noise-reducing, high-efficiency system for reception of both broadcast and short wave. The system comprises a group of resonant circuits which are responsive to various frequency bands within the short-wave ranges, as well as complete frequency response in the broadcast band. For example, the 17-foot section is resonant to a quarter wave length of the 15-megacycle band. The entire length of 60 feet is resonant to a half wave length in the 6-megacycle band. The 43-foot section is resonant to a quarter wave length somewhat below 6 megacycles. The combination of condensers, transformers and transmission line affords various other resonant points throughout the short-wave range. The result is that the antenna system is completely or partially resonant at almost any frequency within the short-wave broadcast transmission band. It likewise affords the high efficiency that a carefully installed antenna of the untuned type would for the other frequencies. When the switch is placed in the broadcast position instead of the short-wave position, the system is then resonant to all frequencies within the broadcast band.

It may be found on some occasions that better short-wave reception will be obtained for a given frequency with the switch in the broadcast position instead of the short-wave position. In a case of this kind, there is a resonant circuit which is made up of a particular combination of the set transformer and the length of transmission line to produce the better reception. This does not mean that the system is lacking in efficiency in the short-wave band at that particular frequency, but it does mean that under some peculiar circumstances a slightly better resonant condition will be obtained with the switch in the broadcast position.

In testing the antenna transformer, D. C. continuity will be obtained only across the two antenna terminals. The resistance is approximately 2.15 ohms.

In testing the set transformer, continuity will be obtained across the antenna and ground terminals. The red and black terminals are connected across the

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Business vs. Technical Knowledge

MUCH has been said in the service industry recently as to the relative importance of the technical and sales requirements of the radio serviceman. We feel that technical ability and sales effort are equally important factors for the serviceman, and one cannot survive without the other so far as business is concerned.

A manufacturer may produce the best product of its kind in the world, but unless he can sell this product he will not survive long as a manufacturer. PHILCO has created a quality product and is constantly maintaining the quality of this product in its factories. PHILCO has also created one of the most powerful sales organizations in the world, and it is the combination of these two, along with consistent advertising, which has placed PHILCO in its position of the world's largest radio manufacturer. The executives of the PHILCO organization think just as seriously about the product and the maintenance of the quality in that product as they do about sales.

The radio serviceman is in exactly the same position as the manufacturer. He has a quality product to offer, but he must maintain this quality through constant study and practice. He must also sell the product through constant sales and advertising efforts. Many servicemen, because they are technically inclined, give more thought to the technical aspect of their work than to sales. It is natural that if a man is particularly interested in one line he will spend more of his time and give more thought to that particular line than to some other in which his interests are less.

Radio service work constitutes a far wider field than the mere fixing of radio sets. The sales angle is particularly important because in many cases the sale or the loss of a sale may depend upon the conduct of the radio serviceman on the job. On the other hand, the man is on that job primarily to restore or improve radio performance, and unless he does this job correctly there is just as much danger of a lost sale. It is evident, therefore, that there can be no definite statement to the effect that technicalities to the serviceman are far more important than sales knowledge and ability, nor can there be a definite statement that the serviceman should be primarily a salesman and secondarily a technician.

Our recommendation to

New Philco Parts Catalogue with LIST PRICES



HERE is the new 1935 PHILCO Parts Catalogue, larger and more complete than ever—32 pages full of complete data on all PHILCO replacement parts. All of the prices in the new catalogue are list prices, so that you can show your customer just how much the parts will cost him. In order to figure your net cost at 40% discount, simply multiply the list price

by .6. You will find enclosed as an insert in this issue of the PHILCO SERVICEMAN one sheet which has been taken from the new catalogue. On this page you will find a complete listing of various audio transformers, chokes and field coils.

If you have not already received your copy of the new parts catalogue, be sure to get it from your PHILCO distributor now.

members of Radio Manufacturers Service is that they apply more effort to the sales and advertising end of the business, because this is the part which has been given the least attention in the past. Your natural interests, which are primarily technical, will take care of your getting the technical information and knowledge. You will continue to do your technical studying, because it is interesting to you and because you know that it will help you do better work, but if you want to make more money just apply some of the simple rules of business to your service work and advertise and sell the quality product which you have to offer—service.



BOAKE CARTER'S R.M.S. BROADCASTS

Every few days Boake Carter broadcasts for Radio Manufacturers Service over the Columbia broadcasting chain. This is what he said on December 11:

"But speaking of birds, the unreliable radio serviceman will become as extinct as the dodo bird, if most people, when their radios go on the fritz, as they do sometimes, would think long enough and remember that there's a PHILCO trained and taught Radio Manufacturers Serviceman within reach. PHILCO has built up this Radio Manufacturers Service organization all over the country and now has 12,000 members in it—men who can and will fix any kind of radio set anywhere, do it right, do it properly and in an expert way, and yet before doing it, quote you a price so that you know how much you're going to spend before you let the radio out of your sight. You can find one of these servicemen 'round about your own neighborhood."



A New Wave Trap for Amateur Interference

SERVICEMEN who have been confronted with the problem of amateur interference in the 6-megacycle short-wave band will be glad to learn of the new wave trap which PHILCO has developed for reducing this type of interference.

One of the short-wave amateur code bands extends from 7 to 7.3 megacycles. On some short-wave receivers the image of these amateur stations is heard at a point below the fundamental by twice the I. F. In other words, on a set having a 460-K. C. I. F., if an amateur station is transmitting on 7150 K. C. (7.15 megacycles), the image will be heard 920 K. C. below at 6230 K. C. (6.23 megacycles). This is within the short-wave broadcast band, and in many cases, particularly when the amateur station is near the short-wave broadcast receiver, considerable interference results.

The PHILCO wave trap, Part No. 38-6619, has

been designed to overcome this difficulty. The trap is so arranged that it can be mounted on the outside of the chassis near the antenna terminal. A wire on the trap attaches to the antenna terminal on the chassis, and a Fahnestock clip on the trap permits connection of the antenna terminal at this point. The trap is tuned to 7.15 megacycles, which is in the middle of the amateur band between 7.0 and 7.3 megacycles. The trap is extremely effective within this range in blocking out these code signals. Below 7 megacycles, the effectiveness of the trap goes out very quickly with the result that there is no reduction of short-wave broadcast signal within the 6-megacycle band, and yet the code signals which interfere within this range are in most cases entirely eliminated.

This wave trap can be obtained from your PHILCO distributor at a list price of \$0.75.

Another Use for the Philco Vibrator

THE letter which we are quoting below will be of interest to those servicemen in the farm territories where 32-volt receivers are in operation.

Edinburg, Texas.
December 13, 1934.

The Taylor Distributing Company,
San Antonio, Texas.

Gentlemen:

While I am not sure it is of any interest to you, I am going to inform you of a use I have recently made of a PHILCO part where all other types of parts proved failures. This information might be used by PHILCO dealers in supplying satisfactory service in this special case where other dealers could do nothing.

Since the bankruptcy of the Majestic builders, I have found it next to impossible to obtain vibrator armatures for the Model 490 Majestic 32-volt receiver. These armatures were a very clumsy affair to service at any rate, and soon failed in service. Various types of replacement vibrators tried were entirely unsatisfactory and soon went the way of the Majestic vibrator armature. All such vibrators were extremely noisy both mechanically and electrically. I discovered that the PHILCO automobile vibrator unit, Part No. 138-5036, could be mounted in both the table and console models and worked out a circuit which adapted it to such use. The peculiar system used by the PHILCO vibrator absolutely eliminates the trouble caused by the old type, and prevents the starting of automatic Delco plants by accidental sticking of points and, best of all, proved almost absolutely silent in operation both mechanically and electrically. The hookup is not at all complicated, and only about twenty cents' worth of parts are required unless an 84 tube is to be substituted for the type 6Y5, which will require about an additional dollar.

Good for PHILCO!

Yours very truly,

MILTON O. LILJESTRAND.

Circuit for this change will be supplied upon request.

Testing and Installing the New Philco All-Wave Aerial System

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same points on the coil. In the short-wave position, this resistance is approximately 7.3 ohms and in the broadcast position 1.5 ohms.

There are several points in connection with the installation which should be carefully observed at all times in order to get the most efficient reception.

1. The antenna should be as high as possible. If it is feasible to run the antenna from the end of the building out to a pole or tree beyond, such an arrangement would be more desirable than having the antenna run over the roof of the building, because of the greater effective height. The full length of the antenna should be employed whenever possible, and best reception in all cases will result. If the distance between the two supports is greater than 60 feet, the 60-foot antenna should be used with insulators at each end and a length of regular antenna wire or guy wire employed to make up the additional distance required. In no case should either the 17-foot section or the 43-foot section be increased in length. If it is impossible to install the entire 60 feet of antenna, the reduction in length should be made from the 43-foot section and not the 17-foot section.

2. Best reception is obtained when the lead-in does not exceed 150 feet. It is possible to extend the lead-in up to 300 feet, but a noticeable loss will be present if this is exceeded.

3. A ground connection to the radio chassis will be desirable in most cases. In some installations, however, better reception with less noise may be obtained with the ground wire removed.

4. The system is designed for the use of only one set transformer on the transmission line. If more than one transformer is permanently connected to the line, the overall efficiency of the system will be reduced and oscillation difficulty will be experienced.

Your New Aerial Ads — Ready for You

*Sensational
New
Discovery!*

**ELIMINATES
NOISE
AND LOCAL
INTERFERENCE**
on both short-wave
and standard
broadcast reception

**PHILCO
ALL-WAVE
AERIAL**

Here's the first and only aerial to eliminate noise and interference on ALL broadcast bands. A spectacular development that improves reception on ANY radio! Installed easily and quickly by **\$750** our experts! Installation Extra

**DEALER'S NAME
AND ADDRESS HERE**

**ELIMINATES
NOISE
on ALL bands!**

**PHILCO
ALL-WAVE AERIAL**

Here's the first aerial to stop interference on both short-wave and standard broadcast bands. Improves reception on ANY **\$750** radio! Installation Extra

QUICKLY INSTALLED
**DEALER'S NAME
AND ADDRESS HERE**

THE new PHILCO All-Wave Aerial is hot! It is hot from a performance standpoint, and it is hot for sales. You can cash in on some real profits now by running these ads in your local paper. All you have to do is purchase one or both of the mats for the ads from your PHILCO distributor; the large one—two-column size—is 10 cents, and the single-column mat is only 6 cents. Take the mats to your news-

paper, and they will insert your name, address and telephone number in the ad.

Every owner of an all-wave receiver is a prospect for this new aerial—and remember, every one you install nets you two profits—\$3 on the sale of the equipment plus your charge for installation.

Questions and Answers

1 Q. What is the cause of excessive background hiss in the Model 38 battery receiver of the type employing the 1A6 detector oscillator tube?

A. A change was made recently in the circuit of this model to reduce the amount of background noise. The connection from the antenna series condenser to the top of the volume control was removed from this point on the volume control and connected directly to the variable arm of the control. This change in circuit affords better regulation of the input signal strength and also of the sensitivity of the receiver. In the late factory production the volume control has been changed from Part No. 33-5087 to Part No. 33-5094. The by-pass condenser, Part No. 6287K, (.15 mfd.) is connected from the lower end of the volume control to ground. The overall resistance of the new volume control is exactly the same as the earlier control, but the rate of taper at the low end is greater in order to afford better control of volume on powerful local stations. The addition of the condenser further adds to this control on the strong stations.

2 Q. What is the cause of dead operation at 12 megacycles on Models 118 and 201?

A. This condition is caused by misalignment of the R. F. circuit with respect to the oscillator circuit. It can be corrected by setting the dial to 12 megacycles and adjusting the setting of the oscillator high-frequency compensating con-

denser slightly until the noise level comes up to normal. Now tune a station at 11.8 megacycles and further adjust the compensating condenser, retuning the dial slightly as this is being done until maximum volume is reached.

3 Q. How can access to the tubes and chassis be obtained in the new Model 29CSX?

A. The tubes can be reached simply by removing the grill from the front of the cabinet. This grillwork is fastened with wood screws and can be taken out readily. If it is necessary to remove the chassis from the cabinet, the baffle and speaker must first be removed from the bottom, and in this way access to the chassis can be obtained.

4 Q. Is a ground connection necessary on the new PHILCO All-Wave Aerial System?

A. In the majority of cases, a ground at the chassis will be necessary. It may be found, in some cases, however, that slightly better overall performance will be obtained without the ground, in which case this wire can be removed.

5 Q. What is the cause of dial slipping in the Model 16, Codes 125 and 126?

A. In some of the early receivers of this model, it was necessary to replace the dial drive cord with a specially impregnated cord. One later type cord can be distinguished from the early one by a pronounced smell of tar. Another of the late type is white instead of black.

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