

PHILCO SERVICEMAN

RADIO: MANUFACTURERS: SERVICE: NEWS

NOVEMBER, 1941



Philco Again Scores With Mammoth

EDITORIAL

SALES INSURANCE

One of the best ways for the dealer of today to insure against loss of sales is to carry a small stock of the more commonly used replacement parts for current model sets.

Since radio merchandise is scarce as compared with previous years, it becomes increasingly difficult for a dealer to change chassis as he has been accustomed to doing in the past when trouble develops. In many instances the dealer may not have another set of the same type in his warehouse or on his display floor and it then becomes impossible for him to make an even exchange for the customer in the event of some difficulty arising.

Sales Lost

Many sales have been lost because the dealer was not in a position to make a replacement of the same type chassis immediately nor was he able to make repairs of the defective chassis without a delay of several days until the necessary replacement parts could be obtained from the distributor.

Dealer Protection

In order to overcome this condition which is necessarily a product of our modern times, it is important for the dealer's own protection that he place himself in a position so he can make immediate repairs to the faulty set.

Assuring Fast Service

The service bulletins for all of the current model 1942 sets contain the parts listing of all the major items in these sets. Philco distributors maintain a stock of these parts and are in a position to supply dealers with any necessary replacements within a reasonable time. In order to assure the fastest possible service to customers, however, the smart dealer will have one each of these parts available in his service shop for immediate use. As the parts are used he will then get immediate guarantee replacements from his distributor. The cost of such sales insurance is small and the benefits will be tremendous. By thus being in a position to give the customer fast service and not having to wait until the parts can be obtained from the distributor, many sales that would otherwise be lost will be saved for the dealer. It is far more desirable to keep a set sold than it is to sell the same set over and over again.

Authorized Refrigeration and Air Conditioning Service Stations Being Established

Philco presents a new and complete service program on refrigeration and air conditioning — authorized Philco refrigeration and air conditioning service stations endorsed by Philco and acknowledged by Philco dealers throughout the country.

These authorized service stations will be recognized as the best informed, best equipped and the best experienced in rendering service and installation on Philco refrigerators and Philco-York air conditioners.

Factory Co-operation

A steady stream of information will be mailed direct from the factory in Philadelphia to all members. Service bulletins describing details of installation, principles of operation, technical information, and other material vitally essential to general refrigeration and air conditioning service will be included.

Philco Field Service Engineers will conduct meetings for members, introducing new Philco refrigerator and air conditioning models, explaining in detail the design, engineering, operating and servicing. These meetings will be of exceptional value and interest to all servicemen concerned with these industries. The Philco distributor's service and parts department is local headquarters for the authorized refrig-

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eration and air conditioner service stations where first-hand information and parts are available at all times.

Never before has co-operation of this type been offered refrigeration and air conditioning servicemen — absolutely free.

New Customers

Philco advertising will produce thousands of new customers for the installation and service organizations throughout the country who have become associated with Philco. The refrigeration and air conditioning service material which will be received by the authorized service stations will save many work hours and thus appreciably increase the service revenue.

There are no dues, no initiation fees and the appointment costs absolutely nothing. On the other hand, the organization will not be open to anyone and everyone. Great care will be used in selecting the servicemen because it will be this group of men which eventually will do practically all of the Philco refrigerator and air conditioning service throughout the country. No application will be accepted until the distributor's man has personally inspected the shop and equipment of the applicant and determined whether he is qualified to do a thorough job on this type of equipment.

How to Apply

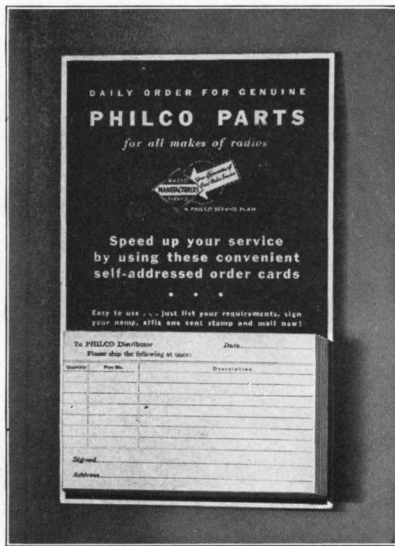
The distributor in your territory has been supplied with authorized Philco refrigeration service station and au-

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Parts Department, Artophone Corporation, Philco Distributors in St. Louis

Daily Parts Orders Speed Up Service



Daily Parts Order Reminder

Servicemen and dealers wishing to order parts from the Philco distributor will find the new Daily Parts Order Reminder a great help.

Philco has furnished to distributors a quantity of post card order forms conveniently attached to a card for hanging on the wall in the service shop. These are self-addressed post cards which are to be used for ordering Philco parts from the distributor. The Daily Parts Order Reminder is yours for the asking from your Philco distributor.

Coupling Transformer Used For AC-DC Set Alignment

In a recent article in the PHILCO SERVICEMAN we suggested the use of series condensers in the output circuit of the signal generator so as to isolate the signal generator from the circuit of AC-DC sets. Mr. Andrew Canatsey, Service Manager of Wagner Radio Company, Philco distributors in Indianapolis, uses the Philco aerial coupling transformer part No. 32-2763 in place of isolating condensers.

He connects the two output terminals of the signal generator to the primary of this transformer and then connects to his AC-DC set from the secondary of the transformer. Increased signal input and greater stability is obtained using a transformer over the method of using the series condensers.

PHONOGRAPH TONE IMPROVED BY CORRECT LIGHT BEAM PICKUP ADJUSTMENT

Phonograph tone quality on the '42 Philco models can be greatly affected by the various adjustments in the light beam pickup. Such items as vertical and horizontal tone arm friction, pick-up wire dress, and placement of light beam all have a definite relation to proper tone.

If the weight of the jewel on the record exceeds $1\frac{1}{4}$ ozs. when measured with the postalette type scale, the jewel will not track the record groove properly and distortion in the music will result. The counter-weight is one of the factors which affects the jewel weight on the record surface. In the aluminum pickup arms, the counter-weight should be $1\frac{1}{2}$ ozs. In the plastic type arm, this counter-weight should be 3 ozs. and in the zinc die cast arm the counter-weight should be 5 ozs. A coil spring will be noticed at the vertical tilt point of the pickup on the underside of the tone arm. With the adjustment for this spring completely loose so that there is no spring tension, the maximum jewel weight on the record should not exceed $\frac{1}{8}$ ozs. on all types of arms.

When the jewel is viewed down the groove, it should be vertical. When viewed across the groove toward the spindle, the jewel angle should be 13 degrees with one record on the turntable and 26 degrees with a stack of records on the turntable.

As in the case of vertical drag, any lateral drag which restricts the free motion of the tone arm and hence the needle or jewel movement will likewise affect tone quality. This lateral drag can be measured with a pendulum type scale by lifting the needle off the record and moving it first to one side and then the other. The amount of lateral drag should not exceed $\frac{1}{8}$ oz. in either direction. If this amount is in excess of $\frac{1}{8}$ oz., the condition is usually caused by the lift pin on the trip arm assembly, (No. 43, bulletin No. 402) being too low and dragging on the large cam gear.

Lateral drag can also be caused by friction in the tone arm swivel assembly because of no vertical end play in the assembly. The tone arm should be free so that it can be moved up and down very slightly in its assembly, thus assuring freedom from friction at this point. A burr or dirt on the ball bearing retainer or the ball race washers can be a possible cause of friction at this point, also the shaft can be tight in its bushing so that it is not free to turn. The dress or arrangement of the wires coming out of the back of the pickup has a definite effect on tone quality. These wires should be toward the tone arm and not away from it.

The proper lubricant for the tone arm swivel is a mixture of 30% Rislon and 70% No. 20 SAE oil. Ordinary oil or lubricant should not be used at this point.

If the jewel is loose in its setting or

if there is a stiff jewel assembly bearing, mistracking in the record grooves will take place. The only thing to do in this case is to replace the jewel assembly.

The position of the light beam on the cell inside the pickup head is most important from a tone quality standpoint. The light should be half on and half off the dark portion of the cell and should be toward the turntable spindle side of the cell rather than away from it. This adjustment is made by means of the adjusting screw on the side of the pickup. The width of the light beam should be $\frac{5}{32}$ ". To make this adjustment, push the lamp socket assembly into its holder until a clear image of the lamp filament appears on the light cell. The socket should then be slightly pushed in beyond this point until the rectangular spot on the light is $\frac{5}{32}$ " in width. The socket assembly is now rotated so that the spot light is vertical.

Careful attention to the details of adjustment on the light beam pickup will always result in superior phonograph tone quality.

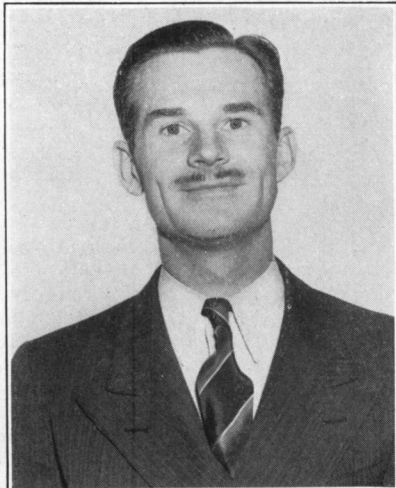
Using Headphones On Philco Sets

Every month dozens of letters are received in the Philco Service Department in Philadelphia, asking how to connect headphones to a Philco radio. In practically all of these cases the letters come from Philco radio owners. Judging from the large number of such requests, it is evident that there is a tremendous amount of business available for servicemen who want to go after work of this kind.

There are many people who would like to have headphones installed on their radios so that they can listen late at night without disturbing other members of the household. This is particularly true of those people who live in apartments where the rulings are rather strict in this respect.

The only materials required are the headphones, two small tubular condensers, an on-off switch, and a headphone jack and plug. The condensers which should be preferably 600 volts .06 mfd. type are connected from each side of the output transformer primary. The other sides of these condensers then connect to the headphone jack which can be mounted on the inside of the cabinet at some convenient point. In most cases it will be desirable to have an arrangement so that the set speaker can be turned off at the time headphones are being used. This can be accomplished by installing the switch in the speaker voice coil circuit.

PHILCO SERVICE EXPERTS



WESLEY BEVAN
Rocky Mountain and West Coast States



ROBERT BLODGETT
Atlantic and East Central States



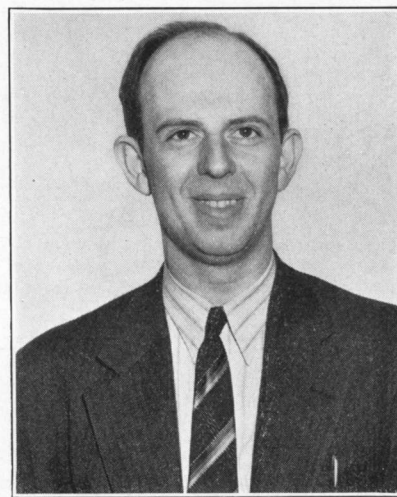
JACK CHERRY
Gulf States



KENNETH FARR
Central States



FRANK HOGAN
West Central and Northwest States



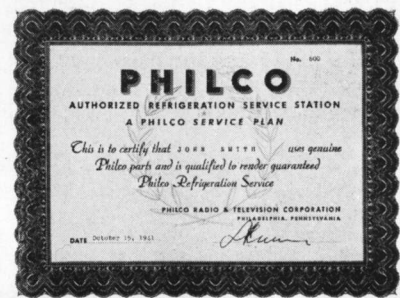
VINCENT SPENCE
Southeastern States

These are the men who travel for Philco as Field Service Engineers. Expert practical servicemen as well as qualified engineers, these men contact all Philco distributors regularly on service and engineering problems on all Philco products. They are Philco's direct contact between the field and the factory Engineering and Quality groups. George Hale, whose photograph does not appear above, covers the northeast and New England states.

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thorized Philco-York portable air conditioning service station application forms. There are two separate forms since some organizations will only qualify as an authorized Philco refrigeration service station, while others will qualify as an authorized Philco-York portable air conditioning service station. There will also be a few that will qualify for both. After these forms are filled out, they will be forwarded to Philco in Philadelphia for approval. When approved the appointed serviceman or organization will receive an attractive 8 1/2" x 11"



New Refrigeration Service Certificate

signed certificate suitable for framing and displaying in the shop. Also when approved the applicant's name will be placed on the Factory mailing list and thereafter he will receive the information described above.

Part of Philco Family

This is unquestionably one of the greatest opportunities which any refrigerator manufacturer has ever made available to independent and dealer service organizations and individuals. PHILCO is a name which is recognized and accepted in over fifteen million American homes. This tremendous public acceptance has been achieved simply because Philco engineering, design and service have given the public the greatest value for the customer's investment. Philco has rapidly come to the front in the refrigerator industry. Philco today by a large margin is the world's leader in the portable air conditioning business — a business which is increasing year after year and offers great opportunities to the aggressive refrigeration installation and service organization.

Here is an opportunity for the refrigeration serviceman to become associated with the vast Philco family and to enjoy the many benefits and profits which such association invariably affords. Be sure to see your Philco distributor now.

QUESTIONS AND ANSWERS

Free technical consultation for servicemen. Address all communications to Editor, Philco Serviceman, Tioga and C Streets, Philadelphia, Pa. Letters will be answered individually and those of general interest will be published in this column.

From Art Klinger
Alton, Illinois

"I am having trouble with a Philco model 38-116, code 125. A drift takes place on the low frequencies. The 550 K.C. station at times comes in on 580, 550, or 530. Tubes and voltage check O.K.

My second problem is a 41-608 phonograph combination. Radio works O.K. but records won't come through. Has loud hum on phono position and as volume control is advanced the light in the beam of light reproducer dims and hum increases."

Answer —

"The drift on the low frequency end of the broadcast band is probably caused by some defect in the low frequency padder 43A in the diagram (Philco part number 31-6124). The fact that frequency drift does not occur at the high frequency end of the band makes any possible fault unlikely.

Referring to the diagram of the 41-608, it will be noticed that an extra stage of pre-amplification is employed in the phonograph position of the selector switch. It is quite possible that the pre-amplifier tube, the type 7C6 or 7C7, depending on the code number of the receiver, may be inoperative or defective in such a manner as to cause the hum you mentioned."

From Russell S. Mortan
Salem, New Jersey

"We experience a condition occasionally on the beam of light models with a type of A.C. modulation or flutter when playing records, particularly on high notes. The tone is not clear and to a person with a critical ear objectionable. It doesn't always seem in evidence due, I suppose, to the type of music I play. On radio the tone is perfect. We have made all the adjustments we know in the head, positioning of beam, centering, etc.

Answer —

"The condition might be caused by having the sapphire jewel contacting the record groove at an improper angle. Looking at the side of the pickup, the jewel should be maintained at an angle not greater than 26 de-

grees with reference to a vertical line drawn to the record surface. Excessive wear of the jewel will cause this angle to increase beyond 26 degrees, causing imperfect tracking at high frequency.

The same condition may be caused by a very stiff mirror and jewel bearing assembly. Any excessive mechanical vibration transmitted to the jewel will be heard in the loud speaker as a flutter or A.C. modulation of the musical tone.

Several other suggestions concerning this condition but applying only to the 1942 record changers are contained in the CONFIDENTIAL SERVICE SUMMARY No. 26 which was sent to all R.M.S. members recently.

Using Service Power Adaptor For 42-1016

In the October issue of the PHILCO SERVICEMAN we gave constructional details of a power adaptor for use in servicing the record changer used in the 1942 model.

The changer used in the model 1016 is slightly different from that used in some of the other models and the connection diagram is necessarily altered. In this model one side of the six volt supply for the reject relay is connected to the chassis. The other side of the six volt supply goes through the various switches. To avoid continuous tripping if the power adaptor were used on the 1016, it is necessary to remove the ground connection from the pickup socket on the underside of the changer base and to connect this by hand whenever it is desired to supply six volt power for tripping purposes.

SPEEDING UP THE COUNT



Inventory scale used in the Philco Parts Department for counting small radio parts by weight. The ratio between the small bucket and the large pan is 99 to 1. When one condenser is placed in the small bucket a quantity is then placed in the large pan until an exact scale balance is obtained. This quantity is exactly 99 condensers.

J. H. BURKE COMPANY
674 Commonwealth Ave. — Boston, Mass.

Phone: Kenmore 3170

EDWARD F. O'DONNELL — Service Manager