INSTRUCTIONS

for

PHILCO
REG. U.S. PAT. OFF.

A Musical Instrument of Quality

Model 116

High Fidelity
American and Foreign Broadcast Receiver

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PHILCO
REG. U.S. PAT. OFF.

TORONTO PHILADELPHIA LONDON

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FOREWORD

PHILCO wants every purchaser to obtain from his set the fine performance that PHILCO engineers have built into it.

These instructions are intended to describe briefly the principal tone, electrical, and all-wave features of this model, and to explain clearly how to install and operate the set.

The few minutes required to read the following pages will be amply repaid in a better understanding of the set, and the knowledge of how to operate it correctly, so as to enjoy the many interesting American programs and the fascinating short-wave broadcasts from all over the world.

For Your Convenience

RADIO PROGRAM GUIDES

A New PHILCO Service

Recommended radio program guides are issued—for free distribution—by the Radio Institute of the Audible Arts, which was founded by PHILCO "to stimulate a wider and more active appreciation of good radio programs among the American people."

Your PHILCO dealer will be glad to secure for you these valuable guides to the "best on the air."

Enclosed with these instructions you will find the* PHILCO ALL-WAVE LOG, *a card containing lists of the leading Standard American Broadcast Stations, U. S. Police Stations, and American and Foreign Short-Wave Stations.

SPECIFICATIONS OF MODEL 116

None of the features listed below is important unless all of the features have been designed to match each other to achieve a Balanced Unit Whole. It is this exact matching and balancing of each feature with all others which distinguishes a Philco from an ordinary radio and makes it truly "A Musical Instrument of Quality."

Major Tone Features

High Fidelity Audio System — 15 Watts

Vastly extended musical range brings out the overtones that identify and distinguish the many and varied musical instruments. Indispensable for full music appreciation. Power Output covering the full range from the faintest whisper to the thunderous finale of the greatest symphony orchestra.

Acoustic Clarifiers

Automatically eliminate unpleasant barrel-like boom, resulting in *clarity of tone* beyond all previous radio experience.

Philco Inclined Sounding Board

The large area and the slope of the Philco Inclined Sounding Board preserve, and project up to ear-level, all the *extended musical range* and *clarity of tone* created by the Philco High Fidelity Audio System and Philco Acoustic Clarifiers.

Program Control

To adjust the radio to receive *each program at its best.*

A. Music (Mellow)—American Stations.

B. Music (Brilliant)—American Stations.

C. Speech—American Stations.

D. Normal—Foreign Stations.

E. Noise-Reducing—Foreign Stations.

New High Fidelity Audio Tubes—Exclusive with Philco

Giving the mellowness so necessary for true High Fidelity Tone.

Two-In-One High Fidelity Speaker

Specially processed center for reproduction of high notes (treble). Flexible rim for reproduction of low notes (bass). Auditorium volume without distortion.

Wide Angle Sound Diffusion

Scientifically designed diffusers spread all sound evenly throughout the room.

Live Rubber Condenser Mounting

Patented Philco feature eliminating microphonic "squeals" and distortion. Full tonal range otherwise impossible.

Automatic Bass Compensation

To compensate for the lessened ability of the normal ear to hear the low notes (bass) in true proportion at ordinary low room volumes, Philco Bass Compensation automatically brings up the bass as volume is turned down.

Shadow Tuning

For *perfect tone* you must have perfect tuning. Philco Shadow Tuning shows you visually when each station is tuned-in perfectly.

Major Electrical Features

Philco Balanced Superheterodyne Circuit

Through the scientific balancing of each unit with all others, Philco engineers have raised the all-wave performance of the superheterodyne circuit to new heights of perfection.

Non-Radiating

Built-in filter prevents radiated interference in other nearby sets.

11 Philco High Efficiency Tubes

By scientifically combining correctly chosen types of Philco High Efficiency Tubes, Philco always achieves power and selectivity impossible with even a greater number of less-efficient tubes.

Power Line Noise Rejectors

Keep power line noises out of the radio.

Rigid Chassis Base

Permanent alignment guaranteed through assembly on rigid rust-proofed steel.

Completely Shielded

Both circuits and tubes metal shielded throughout to attain maximum amplification.

Safe from Fire and Shock

Built to conform in every respect to the Underwriters' Safety Standards.

Major All-Wave Features

Broadcast Band Coverage

U. S. Government Weather Forecasts . . . Standard American Band . . . Both Police Call Bands, Aircraft, Ship and Amateur Bands . . . Both Daylight and Night-time Foreign and American Short-Wave Broadcasts.

Wave Band Indicator

Position of lower center control shows wave band in use.

Full Automatic Volume Control

To counteract fading of distant stations and blasting of local stations.

Precision Radio Dial

Station settings are spaced farther apart on this dial. Result: The easiest, *most precise tuning* in all radio.

Two-Speed Planetary Drive Station Selector

A. Fast Speed for swift turning.

B. Slow Speed for precision tuning of short-wave stations. 80 to 1 ratio.

Noise Excluding Signal Amplifier

Automatically amplifies the station signal while rejecting interference and image noise.

Automatic Aerial Selector

To span oceans requires a scientifically designed All-Wave Aerial System. Used with the Philco All-Wave Aerial, the built-in Aerial Selector automatically switches-in the exact electrical value needed to *maintain maximum power* on each wave band. In effect, a separate aerial for each band.

NOTE: Certain variations in electrical and tone features exist between table and inclined sounding board models.

INSTALLATION INSTRUCTIONS

Aerial

To enable you to get the full performance your set was designed to give, Philco engineers have perfected a scientifically designed aerial known as the Philco All-Wave Aerial. This aerial is built for highest response to the popular short-wave frequencies as well as the standard broadcast frequencies.

In addition, your receiver has built into it an "automatic aerial selector" (controlled by the wave band selector) which keeps the aerial and set always synchronized for maximum reception, whether you are listening to standard broadcasts or short-wave stations.

A feature of the Philco All-Wave Aerial is that it *greatly reduces noise* caused by electrical appliances and equipment in the vicinity. This noise-reduction is effective both on standard and short-wave frequencies.

The terminals on the panel at rear of set chassis marked "RED" and "BLACK" are for connection to the Philco All-Wave Aerial.

Specify a Philco All-Wave Aerial.

(For convenience in case an old-style ordinary single-wire aerial is to be used temporarily, standard aerial and ground terminals are provided on the receiver chassis.)

Before Operating

Locate the radio at a suitable place in the room, with due consideration to convenience of operation, appearance, tone, and handy connection to the aerial terminals and an electric supply outlet. For best tone, the set should be a short distance from the wall.

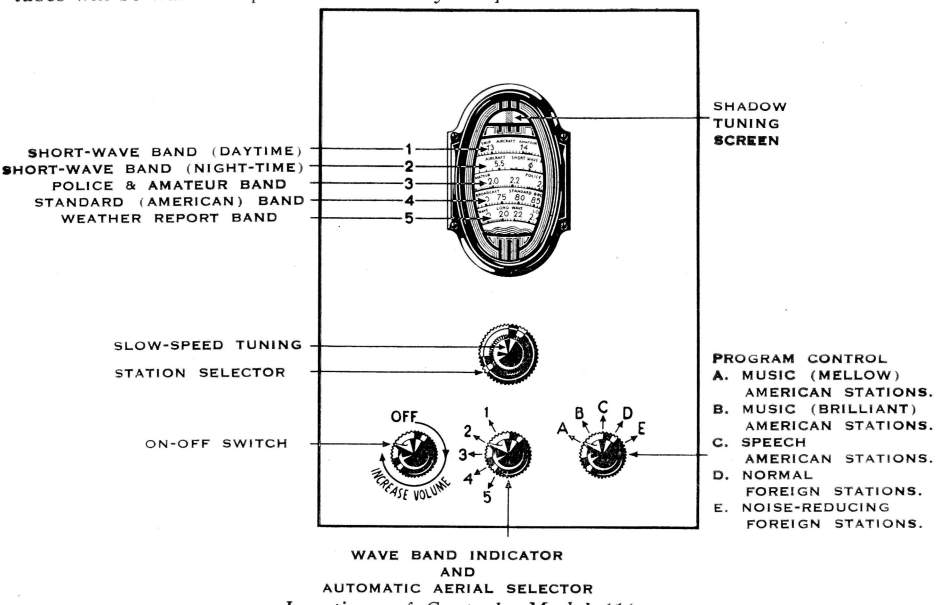
Remove all cardboard packing material, packing tags, etc., from the chassis. Place the knobs (furnished in the envelope with these instructions) on the control shafts. Note that the "Station Selector" and "Slow-speed Tuning" knobs (see cut) are different from the others. The former goes on the thick (rear) portion of the tuning shaft and the latter on the thin portion. Push knobs (except the Slow-speed Tuning Knob) on to within about $\frac{1}{16}$ inch of the face of the panel.

Insert the electric plug into the nearest electric supply outlet. Be sure the current is of the correct voltage and frequency (cycles), as called for on the nameplate on chassis.

OPERATING INSTRUCTIONS

Starting Operation

Study the illustration carefully before operating. Turn the "Volume control and on-off switch" to the right (clockwise) about half its range. In a few seconds the tubes will be warmed up and the set ready to operate.



Locations of Controls, Model 116

Selecting the Wave Band

You will note from the illustration that there are five positions of the wave band indicator, viz.: 1, 2, 3, 4, and 5. The position of the "golden pointer" on the wave band indicator knob and also the "glowing arrow" on the dial (which moves from band to band as the wave band indicator is turned), indicates clearly which band is in use, and assists in tuning the wanted station.

Tuning Standard Broadcasts

We suggest you first become familiar with tuning standard (American) broadcast stations. Turn the Wave Band Indicator to position "4" (standard American band). You can now select the station or program you want by turning the Station Selector. The figures on the standard broadcast scale, by adding a zero, are "kilocycles" (KC) as given in most station lists. For example: WJZ (760 KC) comes in at 76; WCAU (1170 KC) comes in at 117. After getting the station, tune it in accurately by means of "Shadow Tuning" (explained below) then adjust the volume to suit your taste. DO NOT reduce volume by turning the "Station Selector" away from the station, as this will spoil the tone.

Using Shadow Tuning

The slot or window directly above the dial is the Shadow-Tuning screen. When tuning a station, adjust until the shadow is narrowest. This is the point of correct and best tone.

Tuning Police, Amateur and Aircraft

Turn the Wave Band Indicator to position "3." You can now receive U. S. Police Stations at the section marked on the scale. Amateur and Aircraft Stations may also be heard on this scale, at the points indicated. Turn the Station Selector slowly, and use the Slow-Speed Tuning Knob if necessary. A list of U. S. Police Stations will be found on the All-Wave Log supplied with this folder.

Tuning Short-Waves

Short-wave stations (American and foreign) are received on Bands 1 and 2, mostly at the sections where the horizontal line below the divisions is heavier and darker.

Band 1 is the "Daytime" band. Stations may be received on this band during the day until about 4 P. M. (standard time).

On Band 2 short-wave reception is obtained in the afternoon and evening (till midnight). Tune between 9.5 and 10.0 during the afternoon (till about 6 P. M.) and from 4.1 to 4.4, and 5.7 to 6.8, during the evening (6 P. M. till midnight).

Refer to the All-Wave Log supplied with these instructions for a list of foreign and American short-wave stations, with their frequencies in "megacycles" and the corresponding wave length in "meters." (A megacycle is 1,000 kilocycles; this unit is used in short waves to avoid using large numbers with many zeros. Bands 1, 2 and 3 are calibrated in megacycles.)

When trying for a certain station, tune very slowly back and forth across the proper number on the dial, using the Slow-Speed Tuning Knob which enables you to get the *exact point* for best reception. The "glowing arrow" will also assist you in tuning accurately.

Tuning Weather Reports

Turn the Wave Band Indicator to position "5." On this band you may hear government weather reports from the aircraft beacon stations.

Program Control

Positions A, B and C are generally best for American stations (standard or short-wave). Either position A (mellow) or B (brilliant) may be used for reception of music; position C is recommended for receiving speech broadcasts.

Either position D (normal) or E (noise-reducing) will usually be found best for foreign reception.

Note: The above positions are not arbitrary, and much will depend on the type of program and individual taste of the listener.

FACTS ABOUT SHORT-WAVE RECEPTION

Time Difference

Those who have been accustomed to listening to distant stations in the *standard broadcast band* know that they get the best results at night. However, in short-wave tuning this rule does not apply. Owing to the difference in time between the place where you are located and the place where the broadcast comes from, you will hear the various distant short-wave stations at different times during the twenty-four hours. For example: England, France, Germany, Spain and Italy are heard best here during the day and early evening; Siberia, Japan and Australia in the early morning hours; Central and South American stations are heard throughout the evening. North American short-wave stations may be heard at various times of the day or night.

The table on the previous page will give you an idea as to when and where to tune for the most frequently heard short-wave stations which broadcast regularly. Always remember that stations usually broadcast (except in the case of special programs) during *their evening*, which may be morning or afternoon when you are listening.

Recognizing Foreign Stations

Many foreign stations sign off or announce in their own language and afterwards in English, for the benefit of American and English listeners. In cases where you do not hear them sign off, you may be able to tell by their frequency (megacycle number on dial), the language used, or type of program, just what short-wave station you have tuned in. You will find that once you have heard a station a few times, you will readily recognize it when you tune it in. A little practice will make you proficient in the art of short-wave tuning.

Service

For the convenience of all radio owners, Philco has developed a plan for prompt, efficient radio service in every locality. This plan is known as "Radio Manufacturers Service." There is a member in your neighborhood. To get guaranteed work, genuine Philco parts, standard prices—call a member of Radio Manufacturers Service.

Look for this Emblem 

in your Neighborhood

STANDARD WARRANTY

We warrant each new Radio Receiver and Speaker manufactured by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory or factory depots any part or parts thereof which shall, within ninety (90) days after delivery of such Receiver to the original purchaser, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied, and of all other obligations or liabilities on our part, and we neither assume nor authorize any representative or other person to assume for us any other liability in connection with the sale of our Receivers or Speakers.

This warranty shall not apply to any Receiver or Speaker which shall have been repaired or altered outside of our factory or factory depots in any way so as, in our judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor which has had the serial number altered, effaced or removed. Neither shall this warranty apply to any Receiver or Speaker which has been connected otherwise than in accordance with the instructions furnished by us.

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