

INSTALLATION and OPERATION of MASTERPIECE III



CUSTOM BUILT ALL WAVE SUPERHETERODYNE RECEIVER

I WELCOME YOU TO SILVER CUSTOM-BUILT OWNERSHIP and offer you these constructive pointers toward its fullest enjoyment over the years.

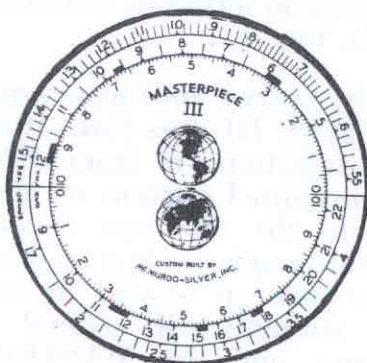
In the following pages I tell you how to set up and operate your MASTERPIECE III receiver. If you will read these pages carefully, and thoroughly apply the instructions they contain, you will obtain the really marvelous reception of which your receiver is capable.

I offer no apologies for the results you will obtain, knowing full well that you will do everything in your power to absorb the help I can give you. If you do, you cannot help but obtain satisfactory results, barring only weather conditions and possible location noise—and I don't think you will expect to hear Europe during a thunder storm, even though it has been done.

As a MASTERPIECE III owner I am ever at your service, and if there is any way at all in which I can aid you, now or years from now, to obtain the full, big measure of satisfaction from your investment to which you are entitled, you have only to call on me.

I want you to learn through the MASTERPIECE III what radio reception really can be—and I'm here to help when needed.

Lee Harold Silver



The "WATCH
DIAL"

YOU HAVE A POWERFUL RECEIVER

Wholly Different from a Conventional Radio Set

If you understand them, the performance curves of the MASTERPIECE III tell you the complete story of the finest radio receiver ever conceived of by the mind of man.

But to get what it will give you, you must give it a chance, by reading over carefully the instructions given herein. You simply can't set up a delicate instrument haphazard, turn knobs any way at all, and expect results. But give the set a chance by careful installation, a good antenna, careful operation, and you'll be surprised at what it will give you in return.

Sensitivity

The sensitivity curve of the MASTERPIECE III is plotted in the fractions of one-millionth of a volt your antenna must pick up from a transmitting station in order that you may hear its signal all over a good size room—not too loudly, but still hear it at the volume level at which you generally talk. As any station at all will generally "lay down" a signal of from one-millionth of a volt (one microvolt) on up to several hundred thousand microvolts for local stations, you can see that your MASTERPIECE III will always give you plenty of volume.

Selectivity

In Europe, broadcast stations are

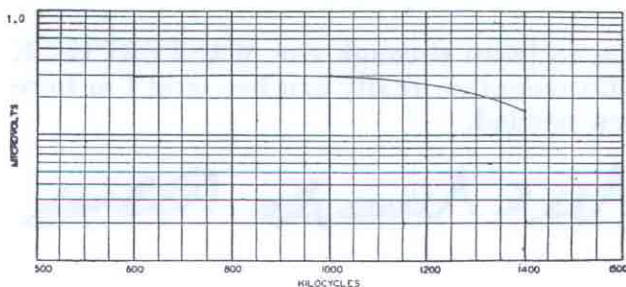


Fig. I—Sensitivity Curve

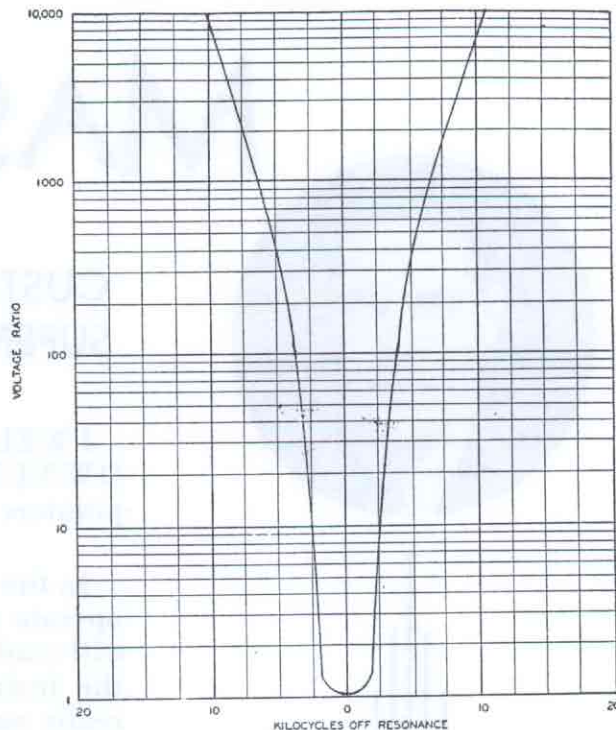


Fig. II—Selectivity Curve

spaced 9 kilocycles apart—in America, 10 kilocycles apart. U. S. stations in transmitting cover a total range of 10 kc.—that is, their carrier frequency plus 5 kc. and the carrier minus 5 kc. It is these side bands which your receiver recreates into speech and music.

Your radio must pass at least 4 kc. (4000 cycles—fundamental musical range) on each side of resonance without loss, and then must cut off sharply to prevent stations on adjacent channels coming through, too.

The selectivity curve indicates how the MASTERPIECE III does this. It is seen to have a reactivity of from 6000 times for the unwanted stations on the next channels to the one you desire. This is more than ample, as it is seldom indeed that the ratio of wanted to unwanted signal strength will exceed a thousand to one, and the MASTERPIECE III is much more than competent to cope with this difference.

Fidelity

Fidelity is the discrimination of any reproducing apparatus in favor of certain musical or voice frequencies as against others also necessary for perfect recreation of the original program.

Fidelity is usually interpreted in terms of how many minimum audible increments the response curve may be up or down from a mean level throughout its range. This sound unit is called a decibel. As ninety-nine out of one hundred human ears cannot detect a 2 decibel variation in a pure note, let alone detect a 5 db. variation in mixed notes as in music or speech, an audio response can be flat to 4 db. throughout the fundamental musical range of 30 to 4000 cycles is regarded as perfect.

The fidelity curve of the MASTERPIECE III was measured with the tone control knob set at its right position. It

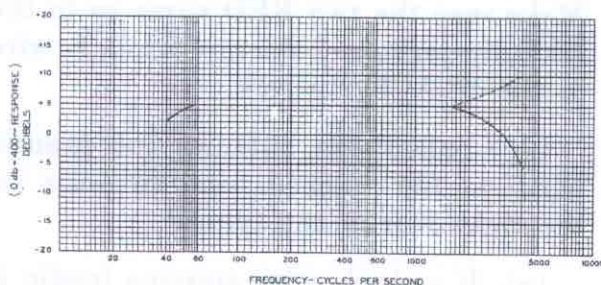


Fig. III—Fidelity Curve

is seen to be flat to 4 db. from 40 to 3100 cycles, or so close to absolute perfection as to be perfect even to the most highly trained musician's ear, since it is only 6 db. down at 4000 cycles. This drop is more than compensated for by the 12 db. rise in the speaker itself at 4000 cycles.

With the tone control you can shift this curve at the high end to give you exactly the type of tone you need for your home at any volume level on any type of program.

Actually when you turn the tone knob to the right, you raise the treble end of the fidelity curve progressively from 2000 cycles up to 4000 cycles about 6 db., giving brilliant, clear tone. As you turn the tone knob left, you drop the treble

curve down progressively from 4000 to 1500 cycles by about 20 db., making for suppression of noise on very weak programs or for deep, mellow tone.

With the tone knob you can do almost anything you desire with tone quality.

Power Output and Automatic Volume Control

The fourth curve on the MASTERPIECE III shows its power output in relation to signal voltage picked up by your antenna. The upward slope of this curve at 45 degrees is the indication of a theoretically and practically perfect automatic volume control system. Both scales are seen to be logarithmic, or as the units depicted sound to your ear.

The full power output of 15 to 18 watts is seen to be reached with an input signal of about 50 microvolts strength, a signal that foreign stations will often lay down in average American residential locations.

So far as your ear is concerned it is difficult indeed to tell the difference between 9 and 18 watts (as you can see by the relative increments

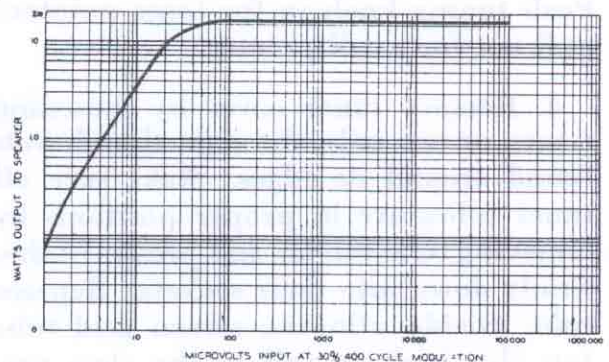


Fig. IV—Undistorted Power Output Curve

at the left of this curve) and as a 20 microvolt (quite weak) signal will result in 9 watts power output, it is proper to say that the automatic volume control system holds all signals from 20 microvolts and up at the same apparent volume for your ear.

The shape of this curve is altered as the volume control setting is altered, and in the range from 1 to 3 watts at which you almost always operate your MASTERPIECE III, one setting of the volume control will hold all stations of 5 to 10 microvolts and stronger at the same apparent volume.

I think that I have indicated to you just how perfect is the MASTERPIECE III by these curves measured on it. The rest is up to you—operate it carefully as I explain to you how to do and it will be your perfect servant for years to come.

I SUGGEST THIS PRELIMINARY TEST BEFORE PERMANENT INSTALLATION

You can, of course, unpack your MASTERPIECE III and immediately install it in its cabinet. It is a wise precaution, however, to give it a preliminary test on a table or bench before so doing. To do this you should proceed as follows:

1. Unpack tuner, amplifier and speaker and amplifier tubes. Save packing cases for future need.
2. Examine all three units to make sure no damage has been suffered in transit.
3. Make sure that all tuner knobs turn easily, and that dial pointers rotate. Push tuning knob in for large pointer; pull out for small pointer.
4. Remove tuner cover by loosening a turn or two only, the eight thumb nuts found around its edges. Make sure all tuner tubes are in proper positions by removing tube shields and pressing tubes firmly down into their sockets. Replace tube shields, allowing screen grid tube top clip leads to fall in the slots provided for them in the detachable tube shield top caps. Replace tuner cover and tighten thumb nuts.
5. Put the cabinet escutcheon and its screws packed with the tuner in a safe place. They are not used until the tuner is installed in its cabinet.
6. Place the tuner on a table. Its control knobs should be to the front.
7. About six inches behind the tuner, place the power amplifier on the table, with its A.C. power cord and on-off switch at the right. Insert the three tubes for the amplifier in their properly marked sockets (two 2A5's at end, one 5Z3 in socket just behind them).
8. Place the speaker on the table or on the floor at the left of the tuner, and insert its plug into the five-pin socket found on one side of the power amplifier.
9. Insert the plugs of the heavy interconnecting cables in the seven-pin socket on the power amplifier.
10. Insert the three tips of the small cable in the tip-jacks of the amplifier. Make sure the two RED wires go to the RED tip-jacks and the one BLACK wire to the BLACK tip-jack.
11. Connect the antenna and ground wires to the marked binding posts on the right rear of the tuner.
 - (a) If a single wire antenna leadin is used, connect it to the SHORT ANTENNA post, and connect the ground wire to the GROUND and to the LONG ANTENNA binding posts.
 - (b) If a transposed leadin is used, connect its two leadin wires, one to the LONG ANTENNA and one to the SHORT ANTENNA binding posts, and use no ground at all.
13. The MASTERPIECE III may now be tested, following the operation instructions.
14. CAUTION! In testing the speaker outside of a cabinet, or with no baffle, never turn the volume up any louder than is needed, for if volume is turned full on, the speaker can be seriously damaged or even ruined if it has no baffle or cabinet.

HOW TO INSTALL THE MASTERPIECE III IN ITS CABINET

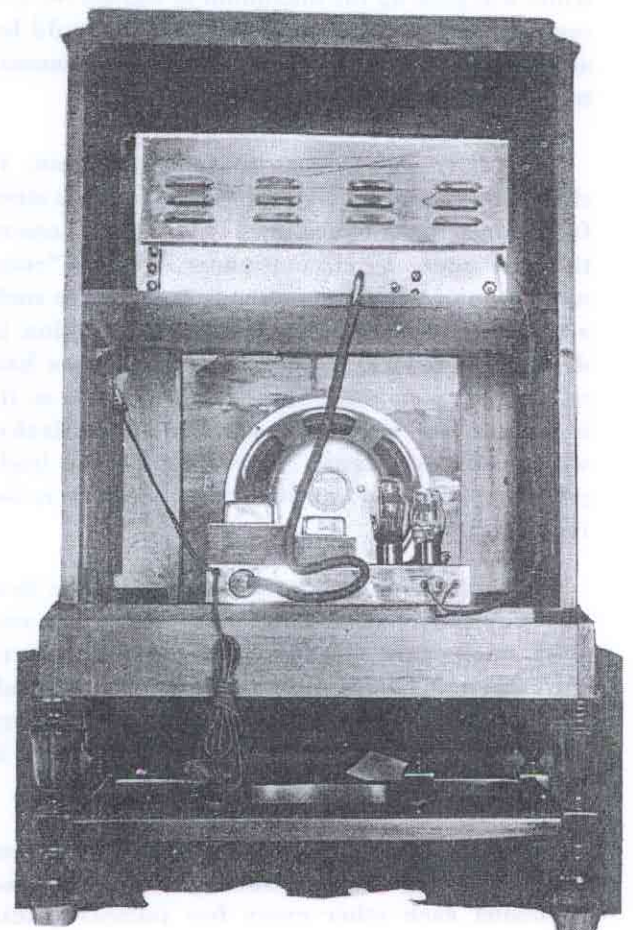
1. Unpack cabinet.
2. With a small screwdriver loosen the set screws in the receiver control knobs just enough so that they can be pulled off their shafts.
3. Lift the tuner carefully into the cabinet from the rear, taking care not to "bunch" the rubber cushions on its bottom as it is inserted. Insert it all the way into the cabinet so that its control shafts project through the holes in the cabinet front panel. Then, and only then, let the tuner gently down on its rubber cushions.
4. Place the power amplifier on the shelf close to the speaker.
5. Lift the speaker into the speaker compartment of the cabinet, pushing it up against the round hole in the cabinet baffle until the felt ring around the speaker cone frame is close up against the cabinet baffle.
6. Insert the tuner and speaker cable plug into their sockets as explained on opposite page.
7. Place the on-off switch in the hole in the right side of cabinet and tighten its nut.
8. Connect the antenna and ground wires to the properly marked binding posts on the rear of the tuner.
9. Turning to the front of the cabinet, by means of the tuner control shafts, shift the tuner in the cabinet so each shaft projects through the CENTER of its hole and does not touch its hole at any point. Push the tuner back into the cabinet so that when pressure is applied to the lower control shafts up, down or sidewise, the tuner can be felt to be free and clear of the cabinet at all points, and to be resting ONLY on its rubber cushions.
10. Place the escutcheon in the cut-out on the front of the panel, and shift it about until it allows the dial to be properly centered behind its window. Holding the escutcheon in this position, start each of its screw holes through the escutcheon into the cabinet panel with an ice-pick or other pointed instrument. Then screw the escutcheon to the panel with the small screws accompanying it.

11. Again shift the position of the tuner, if necessary, by means of its control shafts, so that the dial is just behind the escutcheon window, but does not rub or touch the escutcheon.

12. Place the knobs on the tuner control shafts, leaving one-eighth of an inch clearance between panel and knob shanks, and tighten their set screws. Make sure this is done so that the knob set screws are on the flatted portion of the control shafts. The colored knob should be at the lower right center.

13. Place the cabinet in the desired position, but at least three inches away from any wall behind it.

14. Plug the A.C. power cord into a nearby 110 to 120 volt, 50 to 60 cycles A.C. base board socket and the MASTERPIECE III is ready to operate.



YOUR ANTENNA

The MASTERPIECE balanced antenna kit complete. The exact method of linking the flat-top "egg" insulators, and just how the leadin wires are transposed at each transposition block, is clearly shown.



While the MASTERPIECE III is so sensitive that it will actually bring in foreign stations using only a few inches of wire for an antenna, it must have a good antenna in order to give the results of which it is capable.

Remember that a radio receiver does not "reach out," it simply sits ready to respond to any signal delivered to it. Remember that without a signal fed to it, your radio is useless.

The purpose of your antenna is to collect signals for the radio set. Obviously, the better a signal collector it is, the better will your MASTERPIECE III operate. In order that your antenna will pick up the maximum of signals for the receiver and the minimum of noise, it should be as high above and far away from nearby houses, trees and other objects as possible.

For really good long distance reception, it should be outdoors. If you live in a modern steel frame apartment house, this is absolutely essential, and under no circumstances should a "community antenna" or one already installed in such a building be used if good foreign reception is desired. Likewise, an old antenna you have had up for a year or more should not be used, as its insulators are unquestionably dirty and leaky, which will lose signals your antenna may itself pick up, and also introduce unnecessary noise in reception.

Antenna fall in two general classes. The first is a single wire horizontal "flat-top" with a vertical single wire "lead-in" from the flat top to the receiver. This is quite satisfactory for broadcast band and short wave reception. In a noisy (business or manufacturing district) location, it may employ a noise reducing leadin system.

The second type of antenna is primarily a local noise reducing system, having two transposed (crossing each other every few inches) leadin

wires. Because it may be semi-tuned by virtue of its physical dimensions, it is often a better antenna for short wave reception, while still being excellent for broadcast band reception also.

A Good Conventional Antenna

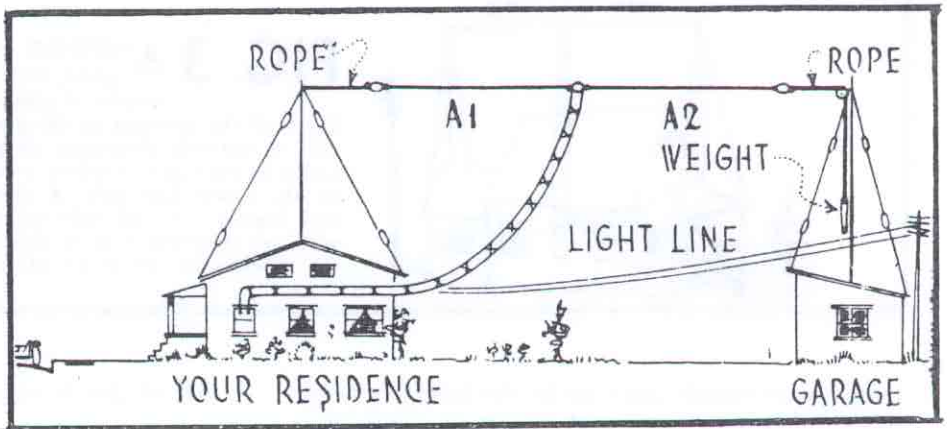
In Fig. 1 is a sketch of the MASTERPIECE antenna (conventional single wire antenna looks the same except that it has only one wire leadin taken off one end of the flat top wire). It consists of fifty to one hundred feet of number 12 to 16 enameled copper wire, one end twisted tightly to an insulator, through the other hole of which is threaded and tied a rope, not wire, in turn fastened to a tree, house, garage or pole, at as high a point as is possible.

At the other end, the antenna wire is looped through an insulator, twisted back on itself for a few inches and the same wire continued on down as the leadin. This avoids breaks and splices in the wire, for if joints are made, they must be soldered for good connection.

Here are the rules for this antenna:

1. Flat top to be fifty to one hundred feet long, as high and clear above surrounding objects as possible (ten to twenty feet above houses, or as close to tops of trees as possible).
2. Flat top to be supported by one or more good insulators (use only Pyrex glass or glazed porcelain) at each end.
3. Insulators to be fastened to supports with rope, not wire.
4. Leadin to be a part of antenna flat top, obtained by using a continuous length of wire for both, and twisting a small loop of it through insulator eyelet at the end (not middle) where leadin is to come down.

Fig. 1. A fairly good antenna placement for a location where the antenna leadin is close to the power lines. Note the sash-weight on the pole erected on the roof of the garage. This weight will keep the antenna at proper tension.



5. Antenna insulators to be fifteen or twenty feet away from supporting objects (may be even fifty feet away, if supporting object is a building housing much electrical machinery).

6. Leadin to be pulled down to point of building entry at an angle, is possible, which will keep it a foot or two away from building. ALWAYS TAKE LEADIN OFF ONE END, NOT OFF CENTER OF ANTENNA FLAT TOP.

7. Leadin to enter house under window (if enameled wire is used) or through a porcelain tube, obtainable at any hardware store.

8. Leadin to be as short and direct as possible, particularly inside house, which it should enter, if possible, at a point close to the radio receiver.

9. If any splites are made in an antenna or leadin, they must be soldered.

10. Keep antenna away from or at right angles to street car lines, main automobile roads or other noise sources, as much as possible.

11. After satisfying requirement 10 above, point antenna northeast to southwest, with leadin at northeast end, for best European reception anywhere in North America (this type of antenna receives best from direction of leadin end).

12. Use, or do not use, a ground connection, whichever gives best results. A good connection can be made to water pipe, to a steam pipe, or to a six-foot piece of iron pipe driven into moist ground. Connection to the pipe should be through a ground clamp, fastened to a portion of the pipe, first scraped bright and clean. Use any wire (antenna wire is quite satisfactory) for connection to radio receiver.

13. Using this type of antenna, connect leadin to LOWER ANTENNA binding post of WORLD WIDE NINE tuner, and connect UPPER ANTENNA and GROUND posts together, and to ground, if using a ground gives best results.

Masterpiece Antenna System

In the sketches are pictured the MASTERPIECE noise reducing antenna system in several typical forms, which is preferable in noisy locations, such as business or manufacturing districts, or even in quiet residential districts.

It is seen to consist really of two flat-tops placed end to end, and two leadins. These leadins are taken off the center of the antenna flat-top, and are separated by two insulators placed at this point in the flat-top. They may, however, preferably be taken off one end (preferable for broadcast band reception). In this case one

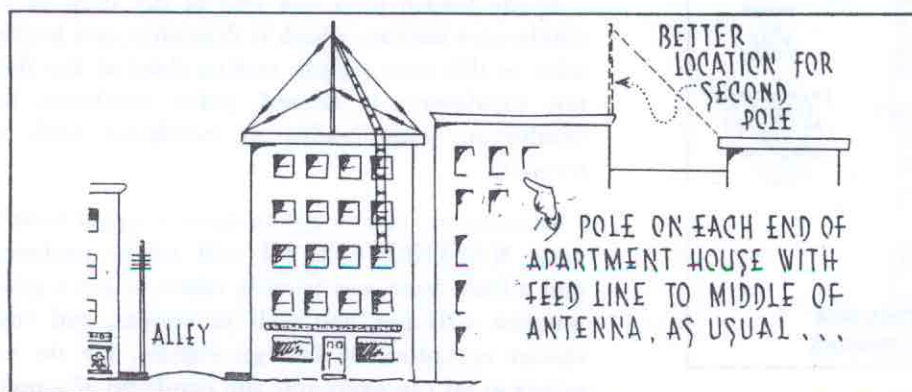


Fig. 2. The apartment house problem, long a source of worry to the dyed-in-the-wool experimenter. Here is shown a suitable placement for the antenna and feeders. Care should be exercised in the running of the feeder lines to prevent them from coming too close to the eaves or cornices.

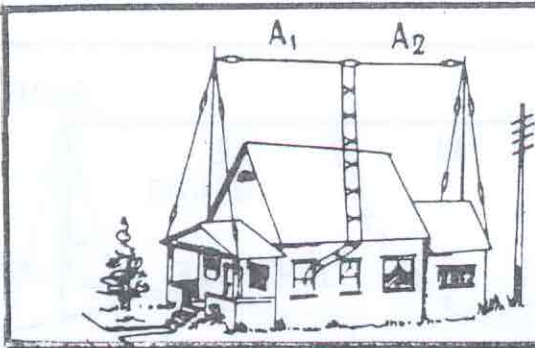
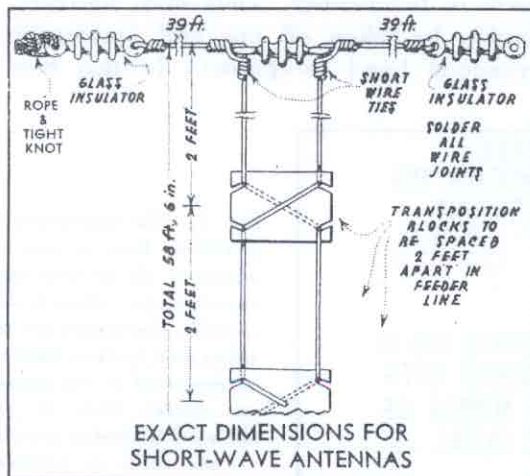


FIG. 3 ANOTHER placement that is only fairly good, but which will give satisfactory results if space is at a premium. The proximity of the antenna to the power line again makes it difficult to entirely eliminate all pick-up from the lines, especially in such places where a multitude of wires is attached by the power line pole. A condition such as illustrated in this Figure is found only in congested localities. For those who are confronted with this problem it is suggested that the antenna be run to an adjacent house, if possible.

leadin wire simply goes up to the joint between two insulators in series and ends there, while the other is connected to the flat-top wire.

This antenna may be erected using the MASTERPIECE antenna kit, which contains wire and insulators. It is erected by measuring off EXACTLY 39 ft. from each coil of wire, and fastening an insulator at the free end, and one between the 39 ft. points of both wires. The remaining 60 ft. of wire in each coil is the leadin, which is brought down right to the set by means of the thirty transposition blocks supplied. One block is spaced every two feet down the leadin, and the leadin wires made EXACTLY 58½ ft. long from flat-top to radio set. This leadin must not be shortened or lengthened, and if it is longer than necessary, it may not be coiled up, but may be stretched between insulators on the house to take up any excess length (except when leadin is taken off one end of antenna, where leadin may be shortened if desired).

In bringing down the leadin, the idea is to keep it untwisted, but to put first one wire on one side and then the other. This is accomplished by threading the leadin wires through the slots in the transposition blocks, so that they cross each other every two feet, on OPPOSITE SIDES OF THE TRANSPOSITION BLOCKS.



All of this is clearly shown in the sketches.

Using the MASTERPIECE antenna, the two leadin wires only should be connected, one to the LOWER ANTENNA and one to the UPPER ANTENNA binding posts, and no ground used.

They should also be shifted from one post to the other, and tried both connected to the LOWER ANTENNA binding post, with the UPPER ANTENNA and GROUND posts connected together and to ground (this may prove best for broadcast band reception, and if so a double pole, double throw switch can be placed inside the cabinet to shift the extra leadin wire from the upper to the lower ANTENNA posts, and at the same time connect the GROUND to the LOWER ANTENNA post).

Keep Antenna Taut

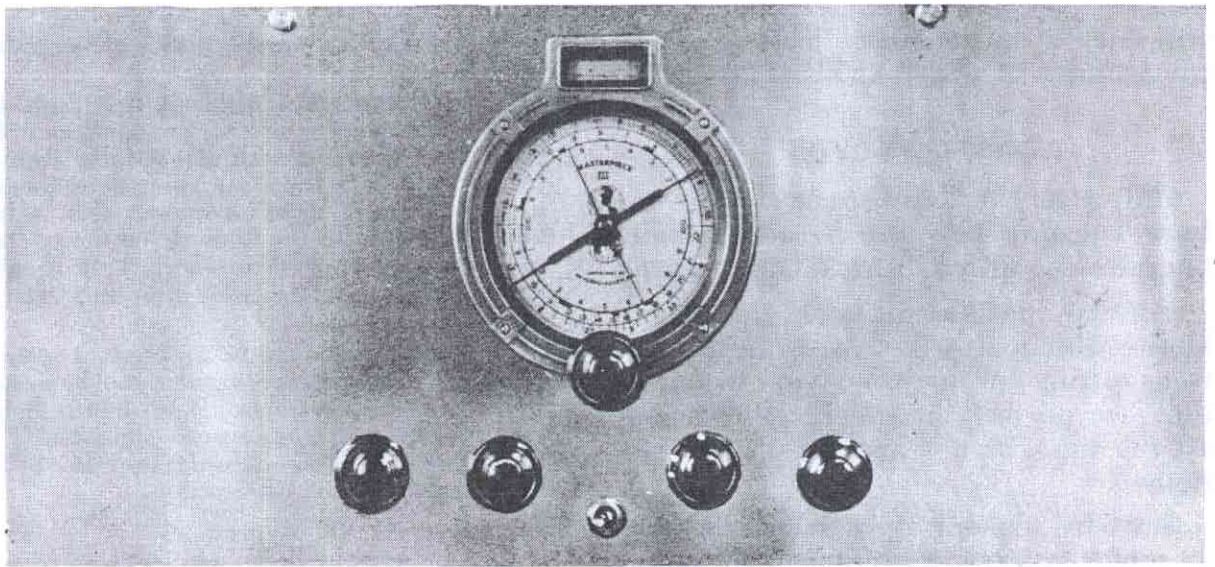
If the flat-top is pulled tight between its supports, this is satisfactory. If one support be a tree, which may sway in the wind, the antenna is kept taut by pulling one of its supporting ropes through a pulley, and hanging a window sash weight on the end of the rope. This will keep the antenna taut even though its supports sway.

Direction and Leadin

For best European reception, the MASTERPIECE antenna should point northwest, southeast if the leadin is at the center.

If the leadin is at one end of the then 78 ft. single wire flat-top, which is desirable, one leadin wire in this case simply ending dead at the flat-top insulators, it should point northeast by southwest, with leadin at northeast end, if possible.

Remember, you've got to have a signal before your MASTERPIECE III will really perform, and a little time and trouble taken to get a good antenna will pay you well in results, and consistent reception of foreign signals, for no receiver at all can overcome the handicap of a poor antenna.



HOW TO TUNE THE MASTERPIECE III

After you have installed your MASTERPIECE III you may operate it—but not before you have followed exactly the installation instructions.

In the illustration you can see all the control knobs labeled to indicate what they do.

Your first step is to turn the on-off switch of the amplifier to the “on” side and then to make sure the phono-radio switch on the back of the tuner is to the left, or in the radio position. This will light up the dial and indicate the set is turned on.

Now set the right center knob so the WHITE dot is up at the top. Turn the toggle switch to the left. Set the small pointer (with tuning knob pulled out) to read 10 degrees on the inside dial scale.

Now push in the tuning knob, and reading the upper (marked white) scale of the dial, set this dial where a local broadcast station is known to be operating, and adjust it carefully exactly to the center of the signal for best tone quality.

Now turn the left knob to adjust volume. **DON'T TURN VOLUME ON FULL OR VERY LOUD UNLESS THE SPEAKER IS IN A CABINET OR BEHIND A BAFFLE. YOU MAY RUIN THE SPEAKER IF YOU GIVE IT**

FULL VOLUME AND IT IS OUT IN THE OPEN.

If you now rotate the tuning knob, you will hear station after station. Each one should be tuned in to its exact center, as indicated by greatest swing of the tuning meter shadow to the left.

Manual Tone Control

With a station tuned in, turn the left center tone control knob slowly from right to left, and notice how it mellows music or speech. Reproduction is perfect with this knob at the right, but it is provided so you may adjust tone exactly to your taste.

This tone control knob permits you to adjust the relation of bass and treble notes in programs to exactly the right relation for perfect quality in your own home, or to suit your taste, at any volume level. It permits you to compensate for apparent loss of bass notes at low volume due to decreasing ear sensitivity.

Tone quality of the receiver is little more than perfect with the tone control knob set to the right.

When “fishing” for distant stations so weak as to be ordinarily lost in local noise, turning this knob fully to the left

will cut out much noise. This is one of the features of the MASTERPIECE III.

Short Waves

Only after you have spent at least one hour learning how the broadcast band operates should you turn to short waves.

First you need a call book, in order to know which short wave stations are transmitting at the time you listen, as they are on only at specific times—not all the time, as are broadcast band stations.

Start by looking up a station on the 49 meter (6000 kilocycles, or 6.0 megacycle band). Several stations are on this band most of the time. Set the right center knob so its yellow dot is up. Turn up the volume until you hear a fair amount of hiss or noise. Then, very slowly and very carefully tune the large pointer, from 5.9 to 6.3 on its yellow scale, and you should hear a station. If you don't, turn the toggle switch to the right, and then tune over this range again until you hear a high pitched continuous signal. (If you hear a squeal, broken up into dots and dashes, it is a telegraph station, not a broadcast station.)

When you find this continuous squeal, you will notice that as you turn your tuning knob very slowly the squeal is first high pitched, then gets very low, and then high again. Set the dial to the lowest pitch, turn the toggle switch to the left, and there's your station.

Band Spread Dial

So far in tuning, the tuning knob has been pushed in. If you pull this knob out, you will find that it operates the smaller inside pointer. This gives fine tuning ratio, on the inside 0-10 band spread dial, and spreads out a small segment of the main dial over a full 180 degree scale to make short wave tuning easy.

Thus, it spreads the 6.0, 9.5 and 11.5 megacycle bands (49, 31 and 25 meter) over nearly the full 100 degrees of the inside dial scale, making tuning of short wave stations as easy as that of broadcast band stations.

To use this dial, start on the 6.0 megacycle band, tuning in the highest frequency station in this band, say W8XK at 6140 kc. as a starter, with the tuning knob pushed in. Then, pull out the tuning knob and the balance of the 6.0 megacycle (49 meter) stations will be found spread out on the 0-10 dial scales, and quite easy to tune and read with the inside pointer.

The same process can be followed for the 9.5, 11.7, 15.0 and 17.6 megacycle short wave broadcast bands, or any others. (Short wave broadcast

bands are marked on the dials by heavy black segments.)

It is important if settings of the inside band spread dial pointer are to be duplicated from day to day, that the main dial pointer always be set at EXACTLY the same point before starting to use the band spread pointer. This is facilitated by tuning in the highest frequency station in any of the four main short wave broadcast bands first to establish each time this reference point.

The inside dial pointer is simply a very fine vernier for the main dial, and can be used on broadcast or short waves. It is of little help on the broadcast band, however, so should ALWAYS be left at 0 degrees in order not to shift the broadcast band dial calibration.

RULES:

The instructions above cover tuning quite thoroughly, and practice will indicate just how to operate the MASTERPIECE III for best results. One or two points should be stressed, however.

1. Stations must be tuned in "on the nose" for good quality. Always tune to the exact center of each signal. The tuning meter shows the exact center on all but the weakest signals.

2. Always start tuning with the inside band spread dial pointer set at 10 degrees, or main dial calibration will be found to have shifted slightly.

3. Regulate volume on weak stations by the volume control for desired volume. Turn tone control knob to the left for noise reduction.

4. Use the beat oscillator (toggle switch turned to right) to locate weak or unknown stations, as it is far easier to locate them by their squeals than by their modulation.

5. Remember that the short wave dial bands are not exact—only approximate (to plus or minus $\frac{1}{8}$ " of dial pointer movement): So in looking for a station, turn the main dial pointer over a range of $\frac{1}{8}$ " around the setting the station should be heard at, with the beat oscillator on, to find it.

6. Don't expect to get short wave stations unless they are transmitting. The world is your range, but you can't hear a station if it isn't transmitting. Use only a good UP-TO-DATE call book, as short wave station schedules change quite often, and old stations go off and new ones come on very frequently indeed.

7. Take off the bottom plate of the MASTERPIECE III tuner and look at the workmanship, but don't try to make any adjustments unless you know EXACTLY what you are doing. All necessary service data is on the bottom pan, when, as and if you need it.

8. Remember, I'll service your receiver free for one year when it needs it. Express charges sometimes often cheaper than local service. Avoid incompetent local service men, and under no circumstances allow ANY service man to adjust ANYTHING in the tuner until he has checked tubes and voltages first. No adjustments whatsoever are necessary for voltage and tube tests—don't let him make any. The MASTERPIECE III is a delicate instrument. Allow no one to tamper with it unless absolutely necessary—and then let me recommend a competent nearby service engineer.

WHAT TO EXPECT

That your MASTERPIECE III will give you finer tone, more power, greater distance range, more consistent reception of foreign stations (if you listen for

them when they are on the air), less interference and less noise than any other radio you can buy today, regardless of name, make or price.

WHAT NOT TO EXPECT

1. That you will get as good broadcast band reception in summer as in winter. You don't—simply because broadcast band frequencies do not travel as clearly or as far in summer as in winter, and static (atmospheric noise no radio at all can completely eliminate) is worse in summer than in winter.

2. That you will get good reception with an old and dirty or poor antenna. You won't. The remedy is to erect a good antenna as outlined herein.

3. That the MASTERPIECE III will eliminate all noise on very weak stations. It won't, nor will any other radio, but it will give clearer reception of very weak signals than any competitive radio you can buy today.

4. That you can separate two or more stations transmitting on the same frequency or wave length, as in the range of 1,000 to 1,500 kilocycles (called the "broadcast graveyard" because in this range many stations are put on the same channels, and will cause interference on any sensitive receiver at all).

5. That very weak stations will not fade. Fading is due to atmospheric conditions, and is no fault of the receiver. Every effort to minimize it has been made in providing the MASTERPIECE III with the best automatic volume control system today known.

6. That you can get any station that may be on the air at any time. You won't get much distance on the broadcast band in summer, or until after dark. Foreign stations will come in better on some days than on others, and some foreign stations will not come in at all.

Remember that the desired stations must lay down SOME signal before you can hear it at all. The receiver does not "reach out"—it merely responds to signals, weak or strong, that your antenna picks up after the station has transmitted them.

7. That you can hear short wave stations listed in out of date call books. Short wave transmission being primarily experimental today, stations change time schedules and transmitting frequencies very often. Use the call lists in current issues of radio magazines, or subscribe to the International Short Wave Club, East Liverpool, Ohio, monthly magazine, which gives up-to-date short wave station calls and schedules; yearly dues only \$1.00. A subscription to this little magazine is a good investment in always securing the world wide entertainment range your MASTERPIECE III will give you.

Where to Get Short Wave Station Call Lists

In any one of five magazines which can be purchased on almost any news stand will be found not only up-to-the-minute short wave call lists, and time schedules, but much interesting radio material as well. These magazines are:

RADIO INDEX
RADIO NEWS
SHORT WAVE RADIO
RADIO CRAFT
SHORT WAVE CRAFT

100 Best Shortwave Stations by Call Letters

Frequencies are given in megacycles and the time is Eastern Standard. In this list, the location of the transmitter is given.

Amateur phones are heard between 1.875 and 2.000 megs. 3.900 and 4.000 megs. 7.000 and 7.300 megs. (Foreign only). 14.150 and 14.250 megs.	GSB, Daventry, England, 9.510. 1-5:30 p.m.; 11:30 p.m. to 1:30 a.m. GSC, Daventry, England, 9.585. 6-8 p.m. GSD, Daventry, England, 11.750. 6-8 p.m.; 11:30 p.m. to 1:30 a.m. GSE, Daventry, England, 11.865. 10:45 a.m. to 12:45 p.m. GSF, Daventry, England, 15.140. 8:45 a.m. to 12:45 p.m.; 1-5:30 p.m. GSG, Daventry, England, 17.790. 6-10:45 a.m. GSH, Daventry, England, 21.470. 6-8:30 a.m. HBL, Prangins, Switzerland, 9.595. Sat. 5:30-6:15 p.m. HBP, Prangins, Switzerland, 7.797. Sat. 5:30-6:15 p.m. HC2RL, Guayaquil, Ecuador, 6.659. Tues. 9:14-11:14 p.m.; Sun. 5:45-7:45 p.m. HIX, Santo Domingo, D. R., 5.948. Tues. and Fri., 8-10 p.m. HILA, Santiago de los Caballeros, D. R., 7:30-9:30 p.m., and Special DX programs at 1 a.m. Sundays. HJA2, Bogota, Colombia, 5.825. HJA3, Barranquilla, Colombia, 12.830 HJB, Bogota, Colombia, 14.930. HJ1ABB, Barranquilla, Colombia, 6.447. 5-10 p.m. HJ2ABC, Cucuta, Norte de Santander, Colombia, "La Voz de Cucuta," 5.975 megs. 6-9 p.m. daily exc. Sunday.	HJ3ABD, Bogota, Colombia, 7.406. "Colombia Broadcasting," 6-9 p.m. daily. HJ3ABF, Bogota, Colombia, 6.200. "La Voz de Bogota," Daily 7-11 p.m. HJ4ABE, Medellin, Colombia, 5.900. 7-11 p.m. HVJ, Vatican City, 15.120. 5-5:15 a.m. daily except Sunday. Occasionally from 10-10:30 a.m. I2RO, Cecchignola, Italy, 11:30 a.m. to 12:30 p.m.; 1:15 to 6 p.m. "Radio Roma-Napoli." JVE, Nazaki, Japan, 15.650. Phone. JVL, Nazaki, Japan, 6.750. Phones California. JVM, Nazaki, Japan, 10.740. Phones California. JVN, Nazaki, Japan, 10.660. Phones England. JVQ, Nazaki, Japan, 7.470. Phone. JVS, Nazaki, Japan, 15.620. Phone. JVT, Nazaki, Japan, 6.680. Phone. JYK, Kemikawa-Cho, Chiba-Ken, Japan, 13.610. 4-8 a.m. JYM, Kemikawa-Cho, Chiba-Ken, Japan, 11.660. 4-8 a.m. JYR, Kemikawa-Cho, Chiba-Ken, Japan, 7.880. 4-8 a.m. JYS, Kemikawa-Cho, Chiba-Ken, Japan, 15.620. 4-8 a.m. JYT, Kemikawa-Cho, Chiba-Ken, Japan, 15.762. 4-8 a.m. KAY, Manila, P. I., 14.980. Phones Dixon.
Amateur phones are heard between 1.875 and 2.000 megs. 3.900 and 4.000 megs. 7.000 and 7.300 megs. (Foreign only). 14.150 and 14.250 megs.	CGA4, Drummondville, P. Q., 9.332. Phones London. CJRO, Middlechurch, Man., 6.150. Relays Canadian Radio Com. programs, 8-11 p.m. and 11:30 to midnight. CJRX, Middlechurch, Man., 11.720. Same schedule as CJRO, q. v. COC, Havana, Cuba, 6.010. 4-6 p.m. daily. CP5, La Paz, Bolivia, 6.080. 6:30 to 8 p.m. 9.120, 7:30-10:30 p.m. CTIAA, Lisbon, Portugal, 9.600. Tues., Fri., 4:30-7 p.m. DJA, Zeesen, Germany, 9.560. Sun., 4-5:30 a.m.; daily, 8-11 a.m. and 5-8:15 p.m. DJB, Zeesen, Germany, 15.200. 12:30-2:30 a.m.; 8-11 a.m. DJC, Zeesen, Germany, 6.020. Noon to 4 p.m. and 8:45 to 10:30 p.m. DJD, Zeesen, Germany, 11.760. Noon to 4 p.m. and 5-10:30 p.m. EAG, Aranjuez, Spain, 9.862. 5:30-7 p.m.; Sat. noon to 2 p.m. GSA, Daventry, England, 6.050.	Amateur phones are heard between 1.875 and 2.000 megs. 3.900 and 4.000 megs. 7.000 and 7.300 megs. (Foreign only). 14.150 and 14.250 megs.

KKH, Kahuku, T. H., 7.520. Phones Dixon. KFZ, Main Base, Little America, 5.740; 6.650; 6.660; 6.670; 8.820; 8.840; 11.850; 13.185; 13.200; 13.245; 13.260. KKP, Kahuku, T. H., 16.030. Phones Dixon. KWO, Dixon, Calif., 15.415. Phones Hawaii and Manila. KWU, Dixon, Calif., 15.355. Phones Japan. KWX, Dixon, Calif., 7.610. Phones Hawaii. LSX, Monte Grande, Argentina, 10.350. Broadcasts 3-4 and 8-9 p.m. daily; Phones New York and Byrd. PHI, Hilversum, Netherlands, 17.775. 7-10:30 a.m. Police Stations, on frequencies: 1.596; 1.634; 1.642; 1.658; 1.666; 1.674; 1.682; 1.706; 1.712; 2.382; 2.406; 2.414; 2.416; 2.422; 2.430; 2.442; 2.450; 2.452; 2.458; 2.466; 2.474; 2.482; 2.490. PRADO, Riobamba, Ecuador, 6.618. Thurs., 9-11:30 p.m. Radio Coloniale, Pontoise, France, 11.711, 3-6 p.m.; 6:15-9 p.m.; 10 p.m. to midnight. 11.898, 3-6 p.m.; 15.234, 8-11 a.m. RKI, Moscow, U.S.S.R., 7.520. Phones USA. (Replaces RNE temporarily). RNE, Moscow, U.S.S.R., 12.000. Temporarily off the air. RV15, Khabarovsk, U.S.S.R., 4.273. 3-9 a.m. RV59, Moscow, U.S.S.R., 5.996. 3-6 p.m. TGW, Guatemala City, Guatemala, 5.940. Supposed to commence tests soon. VE9BJ, St. John, N. B., 6.090. Irregular.	VE9DN, Drummondville, P. Q., 6.005. VE9GW, Bowmanville, Ont., 6.095. Fri., Sat., 8-noon; Sun., noon to 9 p.m.; other days, 2-11 p.m. Relays CRCT and Canadian Radio Commission programs. VE9HX, Halifax, N. S., 6.110. 5-11 p.m. VK2ME, Pennant Hills, Australia, 9.585. Mid. to 2 a.m. and 4:30-8:30 a.m., Sundays only. VK3LR, Melbourne, Australia, 9.580. Daily exc. Sun., 4-8 a.m. VK3ME, Braybank, Australia, 9.503. Wed., 5-6:30 a.m.; Sat. 5-7 a.m. WOO, Ocean Gate, N. J., 4.273; 4.753; 8.560; 12.840. Phones Ships. W1XAL, Boston, Mass., 6.040. Irregular. 15.250. 10 a.m. to 1 p.m. Sunday. W1XAZ, Millis, Mass., 9.570. 6:30-10:30 a.m.; 1:30-3:30 p.m.; 6 p.m. to 2 a.m. W2XAD, Schenectady, N. Y., 15.340. Sun., Mon., Wed., Fri., 4-5 p.m. W2XAF, Schenectady, N. Y., 9.530. 7:40-11 p.m. W2XE, Wayne, N. J., 6.120. 6-11 p.m. 11.830. 3-5 p.m. 15.270. 11 a.m. to 1 p.m. W3XAL, Boundbrook, N. J., 6.100. Mon., Wed., Sat., 5 p.m. to 1 a.m. 17.780. Daily exc. Fri., 8 a.m. to 2 p.m. W3XAU, Newton Sq., Pa., 6.060. 8 p.m. to 1 a.m. 9.590. Noon to 6 p.m. W3XL, Boundbrook, N. J., 17.310. Fri., 11 a.m. to 5 p.m. W4XB, Miami, Fla., 6.040. 4 p.m. to 1 a.m.; (Not heard now, probably off the air). W8XAL, Mason, Ohio, 6.060. Irregular.	W8XK, Saxonburg, Pa., 6.140. 4:30 p.m. to 12:30 a.m. 11.870. 4:30-10 p.m. 15.210. 10 a.m. to 5:15 p.m. W9XAA, Chicago, Ill., 6.080. Sun., 11:30 a.m. to 9 p.m. Tues., Thur., Sat., 4-12 p.m. Mon., Wed., Fri., 4:30-7 p.m. W9XF, Downer's Grove, Ill., 6.100. Daily exc. Sat. and Sun., 4:30-8 p.m.; 9:30 p.m. to 2 a.m. Sunday, 4:30-7 p.m. and 9 p.m. to 2 a.m. XEBT, Mexico City, D. F., 6.010. Relays XEB, commencing at 10 a.m. XETE, Mexico City, D. F., 9.600. 6:30 p.m. to midnight. XGL, Shanghai, China, 7.960. XGN, Shanghai, China, 16.380. XGO, Shanghai, China, 7.575. YVQ, Maracay, Venezuela, 6.672. YV2RC, Caracas, Venezuela, 6.112. 5:15-10 p.m. YV3RC, Caracas, Venezuela, 6.150. 5-10 p.m. YV5RMO, Maracay, Venezuela, 6.070. and 9.600. ZFB, St. George, Bermuda, 10.060. ZFS, Nassua, Bahamas, 4.513.
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The May-June-July Edition of the DX Radio Log of the World was devoted entirely to the short waves. All principal stations of the world listed three ways.

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