

"MASTER SET" SPEAKER POSITIONING

A veteran **reader** sent me this overview and detailed instructions on speaker positioning, which I felt should be shared. So, with his permission, here it is. I will make some personal comments on this critically important topic in the near future. There's some very minor editing and my **bold**:

Master Set Overview

What is Master Set:

Master Set is a systematic procedure of setting up speakers that creates a stable music image that is the same from any seat in the listening room and eliminates inter-speaker distortion and the resulting listening fatigue from this distortion. In performing the setup procedure, one also mitigates the bass resonances of the listening room

Master Set is an outgrowth of seminars held by **John Hunter**, owner of **Sumiko Importers**, for his dealers in order to better set up the speakers in the Sumiko dealer showrooms. It has remained pretty much an in-house procedure for the Sumiko dealers, with no published information of any kind, other than a few internet forum postings.

Prelude:

After **RMAF 2008** I made a longish post in The Lab about Master Set. Since that time I have made some revisions to my initial procedures, and hence am making a new, and shorter, write up. It will be in **2 parts**; an overview here, and then the procedural steps on **The Lab**.

I first heard speakers set up with Master Set at RMAF 2007. I was quite impressed by the sound, which was the same at any seat in the listening room, as well as the clean natural sound of the music, especially vocals. At RMAF 2008 I revisited Master Set and learned enough information about the procedure to be able to do a DIY of Master Set on my own system in my own listening room.

The Principle:

Master Set is based on the idea of the placement relationship of the two speakers with each other in regards to sound pressure level from each speaker into the listening room. The idea is to "anchor" one speaker on one side of the listening room, and then to match the other speaker's sound pressure level with that of the "anchor".

The Results

The music will sound the same from any seat in the listening room, to the right of the right speaker, to the left of the left speaker, in the middle, or anywhere else in the room. This is not really subjective as it is very easy to hear. The elimination of "inter-speaker distortion", I'm using

this term for lack of a better one, results in music that will sound quite clean and natural, especially vocals. This is always a bit subjective, as everyone tends to think their system sounds this way. But with Master Set, all the veils and distortions just seem to disappear. It's easy to hear. I have heard Master Set in 2 quite different music systems - a very expensive system at RMAF with **Rowland** Class D amplification and **Vienna Acoustics Die Musik** speaker, and my own very modest system with a 60 watt Class A/B **Aspen Lifeforce** amplifier and **Osborn Titan Reference** speakers - with similar overall results.

What Master Set is NOT:

Master Set is not based on the usual parameters of speaker placement, distance from speaker to listening position or distance from a room boundary; nor is it based on random placement and room correction. With Master Set, the first parameter above is rendered irrelevant, there is little need for any room treatment at all, though every room and situation is different.

Conclusion:

The best part of Master Set is that it is virtually free. It merely requires a setup song and your time. Even if you do not understand anything I have written, or fail to believe any of it, it will cost you virtually nothing in order to try it. It's worth a go! And then you can evaluate the results. Lastly, words simply do not describe the improvement to the sound of a music system from setting up the speakers with Master Set!!!!

Now, on to the Steps!

Master Set Procedures

The Needed Tools:

The only items needed to perform Master Set are your ears, a setup recording, a tape measure, and a small level. Master Set can be performed by one or two persons.

The Set Up Recording:

Ballad of a Runaway Horse by Jennifer Warnes:

You can find this song on Jennifer Warnes - Famous Blue Raincoat, 20th Anniversary Edition, or Rob Wasserman - Duets, or Trios This song works because of its simplicity and the steadiness of the voice line and the bass line, especially the bass line. Other recordings could be used provided that they have a simple steady bass line that is easy to hear. I've found the above song to work best.

Initial Set Up

Remove any bass traps and other room treatments that you may have in the room and turn off the subwoofer, if you have one. Set the speakers against the rear wall, and perpendicular to it. Speakers should be as far apart as reasonable. Important considerations are to keep speakers 2 to 3 feet away from side walls, and for the listener to be at the point of an equilateral triangle with the speakers. You can measure the dimensions with a tape measure or just make them approximate.

NOTE: Master Set works best if done along the long wall of the listening room, as that best mitigates room reflections, however it can be done along the short wall if necessary. For the first DIY attempt, try and use the long wall. Because the speakers will be physically moved, it is best to remove any speaker spikes at this time so as to facilitate moving the speaker or stand. I have found it helpful to use a tape measure laid out perpendicular from the wall when making the speaker movements. The movements need to be kept small and the best way to do this is with the tape measure as a reference otherwise the movements tend to be too large.

Be Patient. Master Set will likely take you from 1 to 3 hours. The movements are small, and at first go it may be a bit hard to hear the differences that I have described. But just keep at it. You can email me if you have questions or difficulty in the procedures.

Step 1: Setting the "anchor" speaker

This step sets one of the speakers as an "anchor" in the room. Either speaker will do. This step also has the goal of finding the smoothest bass response in the room.

First, just listen to the song, and notice the strong steady bass line in the first 2 verses. There are 19 notes in each verse, though the 2nd verse does have some extra 8th notes added. Listen carefully and notice that some of the bass notes have a "plonky" and/or exaggerated sound character. In this step you will be searching for the spot that will smooth out this "plonky" character of the note as it resonates in the room.

With both speakers playing, move the speaker out from wall about 6 inches and toe in the speaker directly to the listening position. Notice as the sound moves from being centered to this side. Continue to move the speaker out in small increments, 1/2" or so, until the sound is totally from this one speaker. Mark, or make note, of this spot.

Now, continue to move this speaker out from the wall in very small increments, 1/8th" or 2-3mm., and listen to the first 2 verses of the song. You are listening for any difference in the bass response of the 19 notes. Continue these small movements until you find a slight lessening in the bass resonance character. There may be more than one spot where this can occur. However, for keeping this simple, just find the first spot that smoothes out the bass. You may wish to make another very very small movement or two from this spot to find the very best spot.

Note: if you are having trouble discerning any difference in the bass with both speakers playing, you may wish to disconnect the speaker set against the wall temporarily, in order to better hear any bass differences. However it's best to keep both speakers playing. If you move the one speaker out too far into the room the sound will reconnect with the speaker against the wall, and move back to the center. You do not want this to occur. It is important to find the best bass in the

zone where all sound comes from just the one speaker. That will keep this setting independent from the other speaker when you move the other speaker out into the matching position!

Once the smoothest bass response has been found you can set this speaker into a "final" position and level it. This speaker is now "anchored", and will not be moved again during the procedure.

Step 2: Setting the other speaker.

This step will move the other speaker into place and be adjusted to match the sound pressure of the "anchor" speaker. Move the speaker out from the wall about 6 inches, toeing the speaker directly in to the listening position. Now begin moving the speaker out at very small increments, no more than 1/8th in. or 2-3 mm. at a time, and only listen to the bass line. Continue to move the speaker out at these small increments until you hear a lessening of the bass resonances. Once you find a lessening in the bass make a small movement or two of 1/16th in, or 1-2 mm. and listen for the best response. You will also tend to notice that all of the music tends to smooth out and become much more clean and clear sounding as the two speakers equalize.

NOTE: You may be able to feel the bass resonance in your feet. This makes finding the best bass spot quite easy as the resonance will disappear in your feet.

You have now found the placement spot where the speakers are equally pressurizing the room. This is what you are looking for, and essentially you are done with Master Set.

Step 3: You can tweak the midrange setting at this point by varying the toe in of the speaker by toeing out in 1/16th increments. My own experience is that I have never found any real difference in midrange sound from this procedure. Also, you can raise the front of the speaker a couple of degrees. This is known as adjusting the rake angle, and I have found this to be a good effect. Set the speaker permanently and level it.

Finalizing:

Now, move to several positions in the room and listen. Notice if the sound stays the same in any location. If there is some movement of the sound as you move around the room, you will have to reposition the second speaker slightly. If you've done Master Set correctly, the sound will be the same from any listening position in the room as long as you are out a couple feet from a wall. The music will only change in perspective, such as if you move around in a concert venue. In my current listening room my favored seat is on a perpendicular axis with the right speaker, yet the music is perfectly centered between the two speakers.

Final Comments

The sound you obtain with Master Set should have a perfect left-right stereo image with very clean clear instrumental and vocal sounds. Listen first to your most favorite songs and recordings and notice how they now sound. If you have any room treatments or bass traps, you may return them to the room at this time, and note any if there is any change. Turn the subwoofer back on. You may have to turn it down slightly or reposition it as you will likely hear some bass resonance from the sub. I just turned mine down a bit.

If you are pleased with the sound, then you have found something new.
If not, you can always return to your previous setup, having only spent some time and nothing else.

<http://www.high-endaudio.com/RECENT.html#Mar>