

In the previous issues, we looked at how to organise our music system, connect it properly and place our speakers at vantage points. Now let's take a good look at the listening room. The listening room is the last link in a chain that extends back to the recording of a musical performance. To mess with it is like treading on quick sand.

The best sounding rooms have high ceilings, solid floors and walls that are neither overly reflective (mirrored walls or expansive windows) nor inordinately absorbent (shag carpeting, wall tapestries). Rectangular rooms

encounters has a profound effect on the sound quality finally heard. The effect is so profound that acousticians assign 'absorption coefficients' to different materials. Simply put, a coefficient of '1' implies complete absorption, while '0' implies complete reflection of sound back into the room. A coefficient of '1/2' implies that half the sound is absorbed and the other half is reflected back into the room. Rooms with low absorption coefficients have hard, smooth surfaces, such as painted plaster, tiled walls, undraped glass windows. These places tend to be noisy and loud. This is because

One can use, ceiling tiles made of fibreglass, wood stock or foam. Decor-friendly wood-fibre panels can also be used.

A 'slap-back' echo is created by sound bouncing off the wall opposite the speakers. Normally 'diffuser panels' are used to treat this condition. One could even hang heavy drapes across this wall, or simply move in a large book case filled with books of different sizes.

Most rooms have parallel walls, ceilings and floors. This leads to unnatural sounds being produced due to the sound bouncing back and forth between parallel surfaces. If you cannot rebuild your

Walls have ears

Organising your listening room, through structural design as well as interiors, does help in enjoying a good music system, advises Sanjiv Malvi

are always preferred to square rooms.

As we saw last time, we begin by 'roughing in' the speakers into approximate positions; the rule of thumb being that they be placed along the shorter wall of the room. Measure the length of the wall behind the speakers. Divide this by 3. This number will give you the approximate distance between the nearest side wall and speaker. After having roughed in your speakers, sit in your favourite listening position. Have somebody help move the speakers around, till you are satisfied with the tonal balance of what you hear from the left and right speakers. Proper placement will help clean up bass and lower mid range to a good extent.

In order to improve the imaging further we need to minimise the effect of the listening room on the reproduced sound. When you play back music in your room, the sound hits a boundary. It is either absorbed or reflected back into the room. It may even pass through to the other side of the wall. The degree to which sound is absorbed by the surfaces it



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An acoustically well-tuned room

the sound in such a room bounces around a lot, till it dies out. Such a room is called 'acoustically live'. Rooms which have plush carpeting, draped windows and overstuffed furniture, absorb sound easily. They are generally quiet and are called 'acoustically dead'.

Floor and ceiling reflections degrade sound quality to the maximum. These should be minimised at all costs. Such reflections blur the music's quality and deter the imaging, making it harder to locate instruments and hear the subtleties in a recording. Floor reflections can be minimised by having a thick wall to wall carpet or by using a thick rug. The thicker the rug, the more sound it will absorb. Floor reflections can also be minimised by placing a speaker on a stand and angling it slightly upwards. Minimising ceiling reflections is more involved but worth every effort. It's not as simple as putting a rug. There are many materials used to reduce ceiling reflections.

room, you could use interesting devices called 'tube traps' to control this bouncing sound. Tube traps are fabric-covered columns stuffed with fibreglass. These are placed strategically along the boundaries of a room, specially near corners.

Remember that great sounding music is not just the result of great equipment. An accurate and stable image, which provides a proper location of each instrument in the overall sound field, enhances your musical enjoyment manifold. For this to be achieved your listening room is of vital importance. If you do not want to indulge in acoustically tuning up your room, using special devices — you will find it worthwhile to move a couch or a book case, slap down a rug, hang or close some drapes, add cushions to chairs and even try relocating your speakers. And you will feel happiness by reorganising your music system and listening room.