



Interview with Jean Leclerc of Sound Momentum

A company specializing in acoustic treatment

MSI: How did you get interested in acoustic treatment?

JL: It really began when I started experimenting in a small "home studio." I was working at first with synthetic foam and then I got interested in diffusion. I made a prototype and liked the results. From there, I found that I could improve performance by modifying the radius patterns and slightly redistributing mass. It was important to me for the diffuser panels to be decorative and not look like something that you would find in a recording studio.

MSI: Can you tell us about your diffusers?

JL: The design uses a polycylindrical form. The principal reason is because this form diffuses sound in phase.

The various orientations of the radius and the diverse polycylindrical surfaces provide infinite diffusion of high frequencies. The sound is diffused both in time and also in the physical space.

MSI: How do your diffuser panels differ from existing panels available on the market?

JL: They were designed to meet the specific needs of audiophiles. There are two types of acoustic treatment: absorption and diffusion. The "foam" and the fiberglass absorb, or in other words, remove specific frequencies according to the thickness of the absorbing layer. The thicker the layer, the greater the absorption of lower frequencies. If certain frequencies are removed and nothing else is changed, it cre-

ates an imbalance, and that is not desirable. Diffusion prevents the return of sound waves by breaking them up into small pieces that are distributed in all directions. The energy contained in the wave is still present in the room, but it has lost its coherence and the brain cannot decode any information from it anymore. I've designed my diffusers to break up sound into even smaller pieces, allowing the panels to be used at a closer distance than conventional diffusers that usually require a minimum distance of six to seven feet or more to be effective, making them difficult to use in a normal room like a living room or a listening room. My diffuser panels are effective when they are located at only a few inches of distance from the listening position, which allows their use on the wall behind the listening position, or on the ceiling, for example.

MSI: Why should a room or a listening area be acoustically treated?

JL: In a room where two walls face each other, the sound frequencies will bounce from one wall to the other until the energy contained in the wave dissipates. This creates an echo effect that blurs the sound, making any critical listening difficult. By installing diffusers on the wall facing the sound source, the frequencies will not be able to bounce because they have been scattered in all directions. What remains is the sound energy contained in the direct wave. We hear less of the room for a greater focus on the sound source. This creates a dynamic ambience that is ideal for active and critical listening.

MSI: How should a room be treated?

JL: The most harmful sound waves must be treated first. These are the first reflections from the wall facing the sound source. Then, the reflection points on

the walls are treated on both sides and on the front wall at the point where the sound waves will return. The ceiling may also be treated at the mirror point. The mirror point is located at a 90-degree angle. So, if a mirror is placed at this point, we can see the loudspeaker. In fact, any point located at 90 degrees on the walls or ceiling is considered to be a mirror point.

MSI: How does one go about determining the amount of acoustic treatment required for a given room?

JL: The goal is not to achieve 100% treatment of the room, as this will completely isolate the source. It is generally considered desirable to maintain a certain amount of reflection as this contributes to an impression of spaciousness in the listening room. It is important to control the most harmful waves first, the zone behind the listening position. It is also a matter of budget, but even a minimally treated room will sound much better than the same room without any treatment. The first diffusers will serve to "clean up" the sound. Addition of more diffusers will deal with longer echoes, bringing more focus and detail to the sound and to the musical performance.

MSI: What are you currently working on?

JL: I'm currently in a testing period to develop mobile support bases. These bases will allow a room to be treated in real time. The goal is to allow the diffusers to be moved as desired in the listening area to find the perfect location. The mobile support bases will also be suitable for those who cannot or do not wish to fasten the diffuser panels directly to walls or to a fixed support system.

Thank you for your time Mr. Leclerc; we wish you great success with your activities.