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California Brisson and the Soundroom of Doom

Wes Phillips

MIT's Bruce Brisson and Joe Abrams flew to Santa Fe the day before Martin-Logan's Gayle Sanders, thinking that Gayle would prefer to hear the completely treated system upon arrival.

At 16' wide by 17' long by 14' high, my living/listening room is awfully close to a cube; still, the dining alcove behind my listening position gives me another space 8' wide by 12' deep by 8' tall, and this cuts down early rear-wall reflections. Exposed 2" by 14" beams support the ceiling, and the floors are large ceramic tiles set over a poured concrete slab. Although the walls are covered with shelves of books and records, the room is by nature quite bright and acoustically reflective. The tendency of the upper walls (above 8') to develop flutter echo has been partially controlled by the placement of four RPG Abffusors 10' above the floor on opposing walls, although I still need to work in this area.

Brisson's Prime Directive: Prevent nonlinearities caused by bass lobing. Towards this end, we placed a large Bass Trap in each corner of the room with its absorptive side facing the room. (The cylindrical Tube Traps have a reflective coating over 180° of their surface; the other 180°, lacking it, are absorptive.) We then listened to my system and discovered that many of the frequency anomalies--specifically, the unpredictable emphasis of some tones over others--had disappeared. Homing in on the kiva style fireplace in one corner behind the speakers, Bruce flanked it with Bass Traps. Oddly, the result was to more firmly center the sound between the speakers.

Using a mirror, we calculated the first reflection points on the sidewalls and placed Studio Traps--reflective side out--at those points. (To calculate first arrival reflection points, sit in your listening position and have a friend slowly walk the length of the sidewall, holding a mirror reflective side out against the wall and sliding it along as he or she walks. When you see the speaker in the mirror, you have found the first-arrival reflection point.) This broadened the soundstage

dramatically. We then placed a 10"-diameter Tube Trap, absorptive side out, against the wall behind the speakers and precisely between them. This deepened the soundstage, seeming to throw it beyond the wall itself.

Had I been on my own, I would have stopped then. But Bruce was on a roll. To my amazement, he put a 10" Trap directly behind each speaker to absorb the backwave. Details previously lost in the ambient murk leapt out vividly. Then he flanked the speakers with Studio Traps, reflective side facing the listening position, which fleshed out the tonal balance with an almost bodily presence. studio Traps have height-adjustable stands; by raising the Traps above the floor, Bruce threw the soundstage up so that it presented an illusion of height that greatly facilitated the presentation of sonic holography. Bruce then added another pair of Studio Traps on the outside edges of the speakers, rotating them as though focusing their projection, and I'll be damned if that didn't alter--and improve--the amount of precise detail discernible at my listening position. By day's end we had placed a total of 16 Tube Traps around the room, and the difference between the sound of the system that evening and when we had started was (ahem) day and night.

When Gayle walked in the next morning and saw the grove of Traps surrounding his speakers, he took a long, slow saunter around them, examining the setup with a sardonic smile. He shot a challenging look at Bruce and sat down in the sweet spot. Seconds after the music began to play, he leapt up and checked each Trap's placement very carefully. Then he demanded, "Take 'em all out and show me what you did!" So we started all over.

Did the experience make a believer out of Gayle? Yesterday, he told me that it had. "What the Tube Traps bring to an absolute reference system are bass control and dispersion control. As a result of the work we did in your room, I have changed my beliefs concerning dispersion.

"In order to have a product that images well," he continued, "you need to damp the nearfield reflections. The late-arrival energy needs to be randomized throughout the room--you need to even it out. That way, you obtain very keen imaging within a big ambience envelope. But even late-arrival energy can confuse resolution and ambience, so our recent research is showing us that we need to bring up reflections in the 10-20 millisecond window--which triggers your perception of ambience--and then damp it out.

"In your room, we tried something startling for a dipolar design--we damped most of the backwave. Then we opened up the dispersion a bit by putting the reflective side of the Studio Traps near either side of the SL3[s?]. We emphasized that energy, but we had enough absorptive material in the room so that the energy died rapidly and was quite evenly distributed. That gave us better imaging, better focus, and a better sense of space.

"That whole experience has altered the way I think. I used to depend upon the backwave, but absorbing it showed me that we can free ourselves from it. We can start to work closer to that back wall as long as we can emphasize that midfield energy."

Could we have gotten similar results using something other than the Tube Traps? Perhaps, but as Bruce Brisson pointed out to me, we got extremely linear results using them--and that was by design, not accident. If you have rugs, wall hangings, pillows, futons, by all means use them--in fact, I know that a thicker bigger rug, would improve still further the sound I'm getting right now. But I'm convinced that ASC Tube Traps, Bass Traps, and Studio Traps are powerful tools that will free a speaker from fighting the room, and I intend to make them a permanent part of my reference system.

- Wes Phillips