Honey, I Shrunk the Speakers!

And the sound suffered

If you go back to the 1950s, almost all speakers were big. Very big! If you wanted to hear your music loudly enough, the large speakers were all "high efficiency"—made to play to very loud levels with ridiculously small amps. Transistors were not yet on the market, so all the amplifiers were vacuum tube amps. And all but the biggest and most expensive of these had only a few watts of power. If you wanted to fill your living room with the sound of a full orchestra, you needed a big, efficient speaker. The speaker that my father built for our living room hi-fi system was larger than our console TV. When he graduated to stereo, he built another one of these monsters.

Paul Squillo

By the early '70s, when transistor receivers began to replace all of the tube equipment, suddenly we had many times the power for the same price. Speaker designers had more choices. They could make the speaker much smaller and easier to fit into a small room, using the extra amplifier power to force lower notes out of a smaller box. Stereo gave us another good reason for smaller speakers: now we had two to fit into that same room instead of just one.

1950s JBL home speaker

When I came on the scene in 1973, "bookshelf" speakers still couldn't fit on a bookshelf! They had 10- or 12-inch diameter woofers, so they were at least a foot wide, and to fit a mid-range driver and a tweeter, they might be close to two feet tall. They were still relatively loud on a little power. They were also big enough to have plenty of kick at any volume.

The push for even smaller speakers with full bass made the speakers require ever larger amounts of power. We did end up with full-range speakers that could fit on a bookshelf, but they were quite power hungry. They also were starting to lack some of the kick in the music.

Acoustic Research, KLH, and, later, the incredibly popular Advent were known for small, inefficient speakers that were able to play from the lows to the highs of music. Their success started the race to higher and higher power in amps and receivers.

Smaller speakers than this just didn't have the size to reach down to the lowest notes. A few early companies came up with very small "satellite" speakers with big subwoofers in completely separate cabinets. The subs contained their own power to play deep bass at realistic volumes without taxing the stereo that ran the little speakers.

It took surround sound's requirement of up to seven speakers (and today, even more) for the public to accept the idea of extremely small speakers in order to encircle the audience in a home theater room. The subwoofer became a staple of such systems to make our rooms shake on cue, and a competition ensued for still smaller speakers. But, alas, physics wouldn't be denied. The sound suffered.

Most people pick tiny speakers, saying that they'll be good enough, because they don't need to play their speakers loudly.

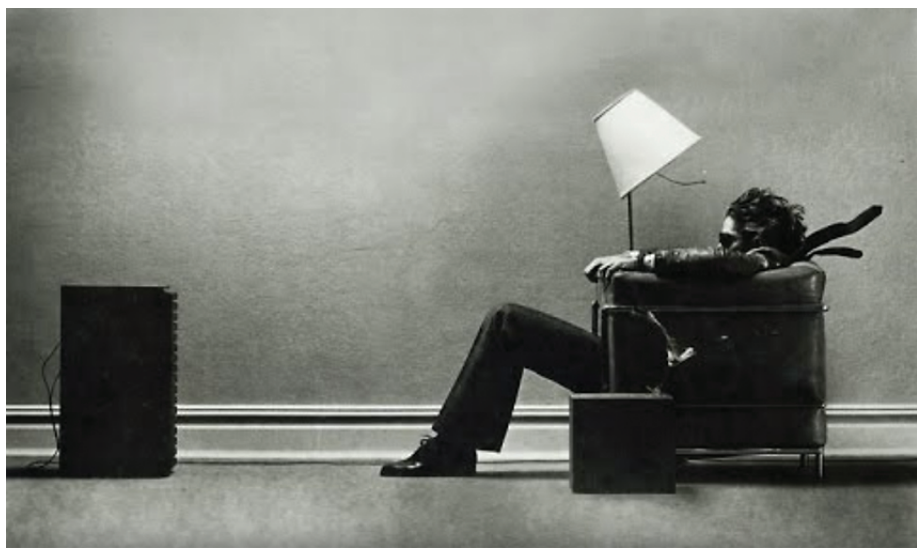
Here is what actually occurs.

If you start by turning up the tiny speakers to the point that's just loud enough for them to convey the excitement of the music, you'll find that it's much louder than you ever intended. This is double trouble for your ears. These tiny speakers are twice as distorted at that volume, and you're also inviting hearing damage.

The bigger 6-inch woofer speakers move the air in the room more easily. When you turn these up to the point that the excitement of the music is satisfactory, they will be playing far more softly than the tiny speakers were, with far less distortion and ear fatigue. The woofers are big enough for you to feel some kick.

Some companies try to cheat around this problem by cutting the tiny speakers off at a much higher frequency, in order to let the bigger woofer add some of the excitement of the sound. That works for the lower sounds, but it absolutely ruins the stereo image. If you play vocal or instrumental music through one of these systems, disconnect the tiny speakers for a minute, and you will hear far more than just low bass notes coming out of your woofer. You'll hear dialogue. You'll hear melody. All coming from a very wrong place.

Of course, I know that some tiny speakers have more kick than others, and that some bigger speakers don't have much kick at all. As a general rule, the bigger you get with a good speaker that doesn't have trouble playing softly, the more listening satisfaction you'll get from ever lower volumes.



Screenshot of the 1970s "Blown Away Guy" ad featuring the Maxell JBL-L100 speakers.

I'm sure that's why JBL, Klipsch, Yamaha, and others are now coming out with upgraded versions of their legendary oversized "bookshelf" speakers. It's certainly why I am fine with making some of my speakers that big.

So here are some guidelines for choosing speakers that maintain a low profile without being detrimental to the sound:

1. If you can cut open your walls, use in-wall and in-ceiling speakers before going to tiny boxes.
2. If you can't cut into your walls, there are some ultra-thin on-wall units that will be big enough to play well softly.
3. If you want the speakers to be smaller on the wall, get small satellites on wall brackets that can play down below 100 Hz.
4. House your speakers in attractive consoles that will draw attention away from what's mounted inside of them.
5. Pick your speakers for the love of their sound, and make room for them.

Remember, one of the biggest, most unwieldy boxes in our home is the piano, and we respect its presence for being a musical instrument. Shouldn't exceptional loudspeakers be given the same respect, for the same reasons?

Paul welcomes your feedback at paul@paulsquillo. com. He'd love to hear from you. Or call him to set up a listen. Paul is a trumpet player, an audio-video specialist, and CEO of Golden Ears, Inc., in Fairfield.