AUDIO UPDATE

Hints and tips on buying a speaker system—Part I

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If you've been shopping for speaker systems, or reading the hi-fi directories and magazines in preparation for doing so, you should by now be fairly confused. Welcome to the club! Since even professional speaker designers can't agree as to what makes speakers sound good, it is not surprising that speaker shoppers faced with hundreds of brands and models find it difficult to make their buying decisions.

The advice that follows was culled from some 25 years of readers' questions and answers. You won't find it a totally definitive guide to choosing a speaker—it would take a book and a half to do that job—but you should find it helpful in avoiding the worst pitfalls that beset the shopper. Let's start where the action is.

Showroom strategies

Be aware that some brands, because of a higher markup or bonus money ("spiffs") paid to the salesman, are more profitable for the dealer than other speakers of equal or superior performance. Also, be cautious about the private label "house brands" sold by some large dealers. House brands prevent you from making price comparisons because the brand name is not available from competing dealers. That's not to say that spiffed speakers or house brands are necessarily bad buys, just that caution is in order when a particular brand is being pushed particularly hard and doesn't seem to be available elsewhere.

Beware of rigged demonstrations. At one time they were an unhappy fact of hi-fi life. They seem to have diminished considerably over the years, but if you have any reason to suspect hanky-panky, make sure that all amplifier tone and loudness controls are switched out and check, if you can, how the midrange and treble balance controls (if any) on the speakers are set. Also, don't let a salesman demonstrate speakers with his own specially taped material; ask to hear a good CD or audiophile disc.

It has been suggested that you bring along a familiar disc to serve as a "standard of comparison" when auditioning speakers. That can be helpful, but only if you already know how the reference material should sound on a good system. If you've become used to the sound of your disc on second-rate equipment, you might not like the way it sounds on a system with a flatter, wider-range response.

Because speaker efficiency varies from brand to brand and model to model, make sure that the dealer's speaker switching panel is set to equalize the levels of the systems being compared. Otherwise, psychoacoustic effects will make the loudest speakers sound best. In fact, a barely perceptible level boost can make the loudest pair of systems seem subjectively more "open" and "live," regardless of whether your perception can be objectively justified.

Listening tests

Don't assume that you are a good judge of sound quality just because you came factory-equipped with two working ears. A sonically trained ear is needed to appreciate nuances of audio reproduction for the same reason that a musically trained ear is needed to analyze subtleties of interpretation or performance. When a listener is insensitive to sonic (or musical) nuances, speaker sound is perceived as a more or less homogenized auditory event. Typical speaker shortcomings such as overemphasis of the upper bass frequencies, a peaky midrange, or a loss of the very high frequencies might go by unnoticed—or worse yet, be preferred.

Here are some suggestions about to what to listen for, starting at the lowest frequencies:

- Bass—This end of the audio spectrum is very much affected by the room's dimensions and configuration, as well as speaker placement. A further complication is that most people confuse a typical 70-Hz "bump" in a speaker's response with true low-bass performance. Real bass has a "thud" and impact that will be appreciated once it is heard.

It is a lot easier to find well-defined low-bass performance on discs today, because CD recordings do not suffer from the inherent bass limitations of LP's. Have your dealer play some CD's with good low bass, and use them to compare speakers. Some systems will audibly "break up" when called upon to reproduce low bass at high volumes; others, instead of breaking up, will deliver only the higher harmonics of the bass tone, omitting the fundamental frequencies that give low bass its "thud" quality. I prefer the second response, because such behavior sometimes means that a little bass boost (from an equalizer or tone controls) will work wonders.

- Midrange—Performance in the middle frequencies depends on how efficient a speaker is, and how loudly it plays. If the mid frequencies (roughly defined as 400 to 3000 Hz) are disproportionately emphasized, vocalists and instruments take on a forward, projected quality, which some listeners like. Unfortunately, this is usually accompanied by a nasal coloration on female voices, brass instruments, and woodwinds. The sound also takes on a hollowness, such as you would hear if you talked into your cupped hands.
- Treble—High-frequency performance is also best judged with a good CD or audiophile disc. When the higher frequencies are present in full measure, they provide spar-

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kle, shimmer, definition, and "air" for music from instruments that include tambourines, cymbals, castanets, and wire brushes.

And finally, don't be upset because you find it difficult to decide which of several sets of good-sounding speakers sounds best. Experts also sometimes find it impossible to make definitive judgments, even when listening comparisons are conducted with scrupulous care.

Design theory and sound quality

Don't get hung up on design theory or special driver configurations as a guide to sonic performance. Speaker designers, like other hardware designers, usually have a choice of available paths to reach their goals. The chosen approach might be based on new materials, new technology, personal prejudice, or whatever. Technical considerations include cost effectiveness, absence of resonance, extended low-bass performance, high efficiency, large power-handling capability, or recently, the ability to be placed next to a TV monitor without affecting its picture.

Granting that you might not share a specific designer's concerns, and because widely different design approaches can produce equivalent audible results, put aside considerations of design theory while you are auditioning speakers. Only after you've decided that you like the sound coming out of a system does it make sense to investigate what's inside it.

Go for neutral sound. Most designers would agree that a speaker system should provide an acoustic analog of the electrical audio signal supplied to it by the amplifier. A speaker system should have no tonal character or sound quality of its own. Otherwise, it will overlay its built-in tonal qualities on whatever program material it is reproducing. Sometimes the special colorations of a speaker may seem to enhance its performance, but on most recordings a speaker with coloration will degrade the fidelity.

Coloration is not mysterious. It almost never comes about because of esoteric crossover phase problems, distortions in the performance of individual drivers, or other hard-to-pinpoint reasons. Gross audible differences between different brands of speaker systems are due almost entirely to differences in their octave-to-octave frequency response. Effects such as shrillness, honkiness, boominess, or, more positively, openness, clarity, inner detail, and transient performance, are almost always the result of a system's measurable frequency balance.

Next month we'll look at the meaning, if any, of some standard specifications. Ω

I got the woofer and tweeter you asked for.