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Subject: Re: Favorite flavors

Posted by [Earl Geddes](#) on Sat, 22 Jan 2005 23:17:03 GMT

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As much as I would love to comment extensively here, I am not sure that I will. Reading the other posts I note some things that I am never comfortable with - subjective terminology. I am never comfortable with terms like "warmth" and "clarity" because they have no accepted definition (they are not in Webster as subjective audio terms). How do I know what others mean by this term and that my meaning is the same as theirs. If they are not the same, how can we use them in a discussion? One thing that I would question is how can a good speaker NOT be good for all types of music. If "reproduction" is the goal then a speaker that reproduces well must do so on all signals no matter where they come from. My experience is that a good set of speakers sounds good for any sources. I admit that some problems with speakers are more evident with some program material than others, but the simple fact that a speaker does in fact sound better or worse with different source material is a clear indication that it has problems. I would ask Wayne what he means by "fairly wide" coverage (please can we not use the incorrect term "dispersion"). To me 90° is the maximum width that can be handled - in a small room - because wider than that will yield too many near field reflections. I can actually live with 60 x 40 in a small room, its just that no mid frequency source can do this (not a reasonable one that is) so this pattern cannot be combined with any LF source without coverage problems at the crossover. I think Wayne is quite correct in his comments about "sweet spot" as being an obsolete concept. It is easy to see why it is preferred for most speakers by just looking at their off axis response - its abominable. So few people look at or even care about off axis response - they simply measure and sit on axis. To me coverage patterns are all important, mainly because everything else is so easy to do. But just try and get a constant coverage in all directions above 500 Hz. thru to 10 kHz. THAT is not easy. And when you don't HAVE TO sit on axis you can do things with speaker placement that dramatically improves the small room near field reflection problem. I have been doing some studies of the subjective perception of minimum phase versus non-minimum phase resonances. I would prefer not to give out the results before they happen (due about June), but let me tell you there is a profound difference in the two. A non-minimum phase resonance occurs when the sound path to the listener is longer than the direct one, so it is delayed in time and hence non-minimum phase. Things like cabinet and waveguide edge diffraction and HOM (Higher Order Modes) in waveguides fall into this category. Minimum phase resonances are those like cone break-up, cabinet resonances etc. Historically these two things are considered the same by just looking at the frequency response, independent of the minimum non-minimum phase characteristics. This study came about as an attempt to define why a new design that I did sounded so good. It was better than expected and so I am trying to explain why. It has led me to whole other thinking about whats subjectively important in loudspeakers. We know now that nonlinear distortion is not - so what is? At any rate I would love to define how I did the design and what my design criteria is, but that would lead us too far into a commercial area. I initially just did this design for myself - for my own system. But, as I said, it sounded so good that I had to think about the commercial aspects. That stops me from giving a detailed description.

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