Subject: Re: Finish up a pair of 4pis
Posted by Wayne Parham on Tue, 25 Aug 2020 17:19:31 GMT
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Yeah, I know. Many of those speaker designers are my friends. The ones that tend to be most interested in edge diffraction - beyond the baffle step - those that are concerned with the more subtle effects tend to be the same designers that are interested in directivity and power response smoothness, e.g. uniformity of the reverberant field. When they focus on edge diffraction, they are looking at high-order modes. So they're definitely my kindred spirits and I've tended to avoid the discussion of cabinet edge diffraction with them, but I have said this publicly several times so they know my position.

Sharp edges very near a sound source are audible. The edges in an old Manta Ray horn make it sound grungy, for example. I've often heard people describe the sound as "spitty" because of the smearing of sounds in the top octave. And you don't just see it in the time domain - You can even see spikes in amplitude response. So it's easy to see the consequence of sharp edges near a sound source in measurements, and most everyone can hear it too. It sounds harsh.

But the further away the sharp edge is, the less audible it becomes. The same folks that are concerned with cabinet edge diffraction also find the environment to be a difficult source of numerous ugly edges and reflectors of various sorts. That's all true, and some can be a problem, especially those nearest to the source or the listener, or those in the direct sound path.

So it becomes sort of a common sense thing, one that is easily confirmed by ear. You will naturally avoid placing a highly reflective or sharp edged object right by your speakers or near your listening position. That's because you can hear its effects and you won't want it there. But you may or may not have a problem with a television between the speakers or a table full of electronics with hard-edged equipment on it. And you probably won't have a problem with the edge diffraction from your loudspeaker cabinets unless someone tells you it's bad and that thought starts to bug you.