Subject: Re: Recessed baffle and speaker grills
Posted by Wayne Parham on Thu, 17 Feb 2022 23:03:11 GMT
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It does create a diffraction edge, which is more significant for wider lips than narrower ones, as you would naturally expect.

However, in my experience, the adverse effects are marginal for lips that are 3/4" or less. I give this measurement empirically, based on baffle edges that I've personally used, tested and gotten user feedback about.

Quick story - Back in the 1970s and early 1980s, I made a big deal out of cabinets with rounded edges. I knew that edge diffraction was possible, so I wanted to reduce it by rounding the edges. The problem was it was really difficult for my cabinet shop to apply veneer over rounded edges. Painted cabinets were no trouble but veneered cabinets were a huge challenge when the edges were rounded.

So my cabinet makers challenged me to do blind tests - comparing loudspeakers made with rounded edges to the exact same models having squared edges. We would A/B the speakers and ask listeners to tell us if they could hear a difference. The listeners were all college students with fresh ears. And none could hear the difference.

I'm not saying it doesn't make a difference. Edge diffraction is an easy physical property to demonstrate, and it does make a difference in loudspeakers. The baffle step is a form of edge diffraction. But the higher-frequency scattering from a squared cabinet edge appears to be inaudible, at least in directional speakers with waveguides. Could be there is just too little high frequency content at the baffle edge because the waveguide directs sound energy forward. So I no longer recommend rounded cabinets. I don't discourage people from rounding their baffles - it surely doesn't hurt - but it doesn't hurt to leave 'em square either.