Subject: Re: Boundary loading
Posted by Wayne Parham on Thu, 04 Nov 2004 16:22:58 GMT
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to point out realistic size constraints and the fact that at the lowest frequencies, the basshorn is usually too small to effectively act as a horn. It either must be used in groups or it must function as a direct radiator/bandpass box because the dimensions of the horn prevent it from acting as a horn at the deepest frequencies.There are two things I am really looking to address with this possible project horn:1. Reduced distortion. At the deepest frequencies, the horn is ineffective and distortion rises dramatically. Harmonics generated by the woofers enter the horn and are amplified by it. This design proposal is intended to reduce distortion from the motor assembly by use of a push-pull arrangement.2. Increased output. I haven't really decided what driver to use, but there are some that would increase average SPL over that of a pair of 500 watt LAB12's.Basically, I just never understood why a mechanism wasn't used to decrease distortion at the bottom end of the response curve. I expected that Eminence engineers put a great deal of effort into the basket and motor and that they could have used a shorting ring like in the Magnums to increase performance. Evidently not. Flux stabilization and the push-pull mounting arrangement both reduce 2HD, so it seems to me like there is benefit in employing one or both of these mechanisms to increase performance of the system.While I was working with Eminence on the B12, I received lots of letters asking for increased power handling too. Lots of people are smoking the LAB12's in LABhorns. It would appear that the common failure mode is thermal, because the voice coils are brown and open. So it seems that the thermal limit might be reached before the mechanical limit. My guess is that it isn't from 20-30Hz signals, it's from an abundance of 60-100Hz energy. That's actually where the LABhorn is performing at its best, but maybe a little more power handling would offer some benefit.Wayne