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Subject: Basshorns - Pro and Con

Posted by [Wayne Parham](#) on Thu, 13 Jan 2005 20:15:23 GMT

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I recently made a post about basshorn folding methods, and it prompted a discussion about the pros and cons of basshorns in general. While I realize that they have their strengths and weaknesses, my earlier post was really comparing folding patterns and not comparing horns with other types of enclosures. But I'd like to enter into that discussion here. My position has long been that basshorns are too small to support the lowest frequencies unless they are huge things, built-in to the room. After all, bass frequencies are dozens of feet long. You really can't even have a 1/4 wave resonator working at the bottom of the bass range unless it's over ten feet long. So to have a horn be of sufficient length and area to really support the bottom octave requires a structure that is literally as big as a house. Still, you can make a scaled down version and gain some of its benefits. A truncated horn will work pretty well in many ways, particularly when the room corner is used. But the point is that it isn't realistic to think that a portable basshorn cabinet can support the deepest bass frequencies. Every one I've seen becomes more and more like a quarter wave resonator down low, and then reverts to being a bandpass or direct radiator. That's fine, nothing wrong with that. But it does mean that the lowest frequencies have 10x less power. The response curve isn't flat. What is happening at the bottom frequencies is direct radiation. You can either EQ it back up or limit output to the passband and forget about the range down low. To me, it was always ironic that some of the most vocal hifi horn proponents - those that dismiss the use of a direct radiating woofer - were often using equalization of their basshorns to increase power for the deepest bass notes. What that really means is that their basshorn system is actually a hybrid, being used both as a direct radiator down low and a horn higher up. There's no problem with that approach, none at all. But that means the talk of "all horns or no horns" is actually just talk because in fact, the basshorn is not fully functioning as a horn. Still, if what you want is maximum SPL, a horn is the way to go, even a truncated horn. Over the range where efficiency is increased, distortion is decreased. Even if it loses this ability down low, the benefit is gained over the horn's passband and that sometimes makes it worthwhile. As long as you have the real estate, because even a highly truncated basshorn is pretty large. Those are some of my thoughts. What are yours?

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