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Subject: Re: 'way down deep' Article

Posted by [Wayne Parham](#) on Mon, 13 Jun 2005 10:31:51 GMT

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Found it this time. I looked through each of the reviews at the links below and didn't see it the first time. But then after you said the link was near the beginning, I looked and found the "page two" link. That's where it is. You know, linear motors are much more precise than commutated motors. That's why the results were measured as they were. When large signals are used, the lack of precision is lost in the scale of the movement. Very minute details are lost. Disk drives either use linear motors or stepper motors to control the heads. The location is very critical, and you need to be able to move the heads rapidly to a very precise position. So linear motors are used, which can position rapidly and precisely. Steppers motors can also be used, where each step represents a track. But you can't use a commutated motor because it isn't precise enough. Still, you get a leverage benefit by using a commutated motor and pulley. It's a pretty clever deal. Engineers always passed it by for loudspeakers because of the precision issue. The cone was never expected to move very far, so precision was more important. But when large excursion became more important, that made the commutated arrangement have its place. I mentioned this on another site, but it got lost in the noise of that site. The main point I wanted to make was that I wouldn't recommend it for high-fidelity use because of its lack of precision. I can see it having a place in theme parks and exhibits, places where you want the effect of low frequency rumble. But I'd much prefer a high quality woofer with a linear motor for true fidelity. Another thing I've said a few times that sometimes gets overlooked is the point that basshorns don't really do fidelity when done small. I mean, really, how does one expect to actually have a 20Hz basshorn unless it's very large? When I see folks using prosound basshorns in their homes, I think it's not really the best way to go because they're just too small. I like horns, and I use them everywhere I can. But I'm also a realist, and the fact is that a basshorn is more like a tuned pipe, and it just isn't big enough to act anything like a horn down low. It's a resonator at best, so I think there are better ways to make a system perform well than to use a 40Hz horn and push it an octave below that. All that will do is give a whallop of a peak at 40Hz, followed by big dips on either side. It's great for clubs, but probably not what I'd suggest for a home system, at least not if high fidelity is desired. That's one reason why I like depending on the corners so heavily - By forcing the bass to radiate from the apex outward, corners reduce the radiation angle enough to provide 9dB increase over omnidirectional radiation. That's pretty significant, if you think about it. It's the same as you'd get from a 70° horn and it doesn't require a labyrinth of ducts that introduce response anomalies and panel vibrations. If a person were to make their basshorns large enough and rigid enough to solve these problems, I'd be all for them. But short of that, I say leave the boom/buzz boxes in the clubs where they belong.

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