Subject: Horns / Arrays
Posted by Ralph on Thu, 19 Aug 2004 19:10:27 GMT
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Are there differences between arrays and horns if pattern and efficiency are the same? Ralph

Subject: Re: Horns / Arrays
Posted by Bill Fitzmaurice on Fri, 20 Aug 2004 13:03:01 GMT
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I assume by arrays you mean a line array of direct radiators in a single box; keep in mind that a line array of horn loaded drivers is also possible. If you do mean a single box line array versus a single horn loaded box the line array will likely be a tall skinny box as opposed to a squat horn loaded box, and as such the line array will go to a lower frequency in the nearfield mode, while the shorter, wider horn will go to a lower frequency for the baffle step.

Subject: Re: Horns / Arrays
Posted by Ralph on Fri, 20 Aug 2004 19:38:14 GMT
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I know you can make an array of horns and that is really a third type in my line of reasoning. I am wondering if there is any difference in sound quality using horns. I am guessing horns make more output per driver but the response isn't quite as good.

Subject: Re: Horns / Arrays
Posted by Bill Fitzmaurice on Fri, 20 Aug 2004 20:03:12 GMT
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I wouldn't necessarily say that. What is for sure is that they are two different ways to get to high sensitivity, arrays and horns, and which is the better way is in my mind very much an economics decision. The line array is user friendly in that it doesn't require the space that a horn does for equal SPL, but it does need a lot of drivers, so it can end up the pricier option. But if you can get the drivers on the cheap I think the line makes more sense. It really boils down to a case by case situation.

Subject: Re: Horns / Arrays
Posted by Ralph on Fri, 20 Aug 2004 21:32:39 GMT
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I can see your point about economics. Both arrays and horns are large but output is too so it boils down to SPL per cubic foot. Sound quality is in the mix too. What I am wondering is the characteristic differences, and things like delay, phase, response and distortion. If two systems were made, an array of raw speakers and a horn, and if both had the same dispersion and efficiency and total output, what would be the differences in the two?

Subject: very little
Posted by Bill Fitzmaurice on Sat, 21 Aug 2004 13:10:25 GMT
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If you managed to duplicate all those functions I'd expect very little difference between the two. But I doubt that you'd likely have all factors the same, at least not in a small format, as the line array would likely have a far different height to width ratio and thus a very different radiation pattern as well, especially in the high frequencies, where the physical shape of a tweeter array could be quite different than that of a horn-loaded HF section of the same sensitivity.