Subject: Re: First speakers - a little ambitious - curved array
Posted by Eric J on Sat, 22 Aug 2009 15:32:38 GMT
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In my opinion, you are pretty much limited to 3/4 inch dome tweeters by the combination of frequency range covered and the need to avoid comb filter distortion.

There is only one dome tweeter on the market that actually allows cutting the flanges to make the distortion occur below between 15K-16Khz, and that is the Dayton Neo 20A. I did that with mine and got the C-to-c distance at just slightly over the actual with of the speaker itself, or .80 inches. If you use a 1/2 have inch dome, you can't go low enough in the crossover to be usable. if you use above a .75 dome, you will have comb distortion kicking in at actually hearable levels. Most people's perception of sounds drops substantially above 14000hz, so for most people the comb filter distortion is un-hearable IF YOU HAVE LIMITED IT TO BE ABOVE 15KHZ.
You are also required to use midranges no bigger than about 4 inches to be assured of not getting nasty CFD in the midrange.

If you want to avoid any possibility of hearing it, AND reduce your massive work of cutting the flanges on the neo's you must use ribbon or planar speakers. However, these speakers are far from flat in their frequency responses unless you are willing to buy those that exceed $75 each. For me this raised the price to unacceptable levels. I was building the best I could for under $1500---complete including electronic crossover, 3 amps and a preamplifier for a full tri-amped system.

So.... you either use Dayton Neo 3/4 inch domes and cut each flange and then put them together tightly, or you use a ribbon. Considering the effort I had to go into to cut each flange, I cannot imagine any manufacturer doing that.