Subject: First speakers - a little ambitious - curved array
Posted by Villain3g on Fri, 07 Aug 2009 02:04:01 GMT
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When I finally decided to build a pair of speakers, I knew that I wanted to do something different. I also wanted it to be relatively "simple". The first thought was a single full range driver in a transmission line but they look like conventional floorstanding speakers. My second thought would be a line array but they require a mixer to combat the combing effect. This is apparently due to each driver from center being a little further from the listener's ear. So I figured, why not have every driver equidistant from your ear. This would create a pretty nice listening experience for focal point.

Keeping cost and final impedance as factors, I went with 16 peerless 2" full range drivers per channel. I arranged them in a curved line array with a radius of 12 ft. I used 3/4" mdf for the sides and internal bracing. Again for cost, I used hardboard for the curved front and back. I wired it up in a configuration to end up with 4ohms. Attached are some pictures.

Originally I was listening to them in a larger room. About 25' wide by 14' deep. In that room they were placed wider apart and I was sitting at the designed height. At first they sounded messy but as I listened longer the speakers started to fill the range. After they had broken in, I was surprised at how deep they were going. I'm not up with all speaker terminology but their presence seemed broad and quite realistic. I tested the speakers with a variety of music. They excelled with acoustic guitar, vocal, and smooth jazz. Where they seemed to fall off is with electric guitar as in heavy metal. The distortion in the guitar is muddled. Maybe I need an equalizer for the different types of music.

Unfortunately I have to move them to my bedroom. They don't have the same presence but its still ok. While in my room played some test tracks through them. I was surprised to hear sound all the way down to 30hz. Now I don't have any instrumentation to measure the drop-off, but I'd say it was usable down to 40hz.

My next step is to stiffen the enclosure. Any advise from the seasoned veterans would be much appreciated. I plan on doubling the wall thickness to two layers of 3/4" mdf. For the curved baffles I want to use two layers of 1/2" mdf. I think it will bend enough. Flush mounting the drivers and back chamfering the baffle is on the list as well. I'll also round over the edges of the cabinet.

If all goes well with that, I want to incorporate a diy powered sub somewhere in the equation. Either one under a center channel or one under each the left and right speakers.

Quite the lengthy first post. Mostly filled with noobish comments but hopefully you enjoyed it and have some input on the topic. If anything they look sexy...