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Subject: Diffraction and Baffle Spacing - critic this design?  
Posted by [Adrian Mack](#) on Tue, 08 Jul 2003 03:08:05 GMT

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Hi guys, Above is a diagram showing something that I might be building. As for crossovers, I'm using the 1Khz two-way Pi crossover, and the other crossovers are all active, probably 2nd order LR or something (these are transient perfect?). Now... onto the mystical subject of time/phase alignment, and other catch-phrases like that. I know theres so many opinions/views on this topic, but what I do know is that we can only align phase at one frequency, and thats it. So its quite pointless in a sense. Also room reflections will be screwing up the phase angles too. But should I take any of this into consideration? Also should I bother with aligning the acoustic centers? The mouth of the horn itself is a big cause for diffraction they say, but I've heard that mounting the horn on the baffle removes this (strange, I dont know how true this statement was, and I dont think its true). As can be seen the horns are rather close to the edge of the enclosure, so I'm not sure how bad diffraction is going to be here. All horns/drivers are going to be flush mounted, and I think that crossover overlap is pretty limited using the linkwitz riley crossover, and also the horns/drivers are all placed pretty close together so that destructive interference is minimized from the multiple "point sources". Both horns have wider horizontal dispersion than vertical so hopefully overlap is minimized. Does anyone think I should round the edges? Apparantly it has to be rounded quite a lot for it to have any real effect, I dont really like the look of highly rounded edges, or rounded edges at all for that fact. So I dont really want to do this. Does anyone think the distance of 20" from the ground to 15" driver is too little? I'm thinking I could get some floor bounce notch problems this way, I dont think it will be too bad. Also, being this close to the ground is quite a distance away from the listeners ears so these frequencies 70-300Hz would be delivered at a different time, but because from 300Hz and down its starting to get rather omni-directional, I think this wouldn't pose a problem? I'm open to all critics and help I can get with my baffle spacing arrangement in the diagram above, and also if I've got diffraction minimized or not. Thanks! Adrian