Subject: baffle spacing, vertical alignment
Posted by dr.joe on Sat, 07 Feb 2004 01:51:08 GMT
View Forum Message <> Reply to Message

I had glibly decided to house the drivers of my quasi-JBL 4430 clone project in separate enclosures: a 5 cu.ft. box for the 2235H LF drivers and a "sleeve" for the 2445H/2380A HF section that would be about 12" high and the width and (perhaps) the depth to match the bass cabinets.Then questions about vertical alignment and baffle spacing reared their heads.What is the optimum distance, or range of distances, between the LF driver and the horn, or the centre of the LF and the centre of the horn? Craig referred me to a JBL technical paper which explains how to calculate this, but it seems to require one to know the wavelength at crossover frequency, and have a specialized calculator. I don't even know the length of an 800 Hz wave.This is all probably transparent for most of you! I appreciate your patience.I'm also wondering about vertically aligning the voice coils of the LF and HF drivers. This is what the 4430 monitor does, but it uses a shorter horn. In my case, the 2445/2380 combination is 200 mm longer than the 2235 woofer, so if I flush mount the horn on the baffle (whether a separate baffle or not), it's automatically not aligned.But does that mean I should have the horn sticking out 200 mm past the front baffle? That, one presumes, would introduce its own set of reflections and refractions. . .Neither sound like optimum alternatives.Once again, suggestions and direction much appreciated.Regards,Joel.

Subject: Re: baffle spacing, vertical alignment
Posted by Adrian Mack on Sat, 07 Feb 2004 04:03:01 GMT
View Forum Message <> Reply to Message

G'day JoelWe have discussed acoustic centers before - see post 4430 Studio Monitor. As to baffle spacing - keeping the drivers as close togethor to each other is best. It reduces comb filtering interferance, shifting crossover nulls further off axis and time delay between drivers. You can calculate exact vectors where the two sound sources are in cancellation around 180o, if that is the sort of thing you want to do. Keep them as close as possible though. Calculation of wavelength is speed of sound/frequency. Speed of sound is 344 meters/second which will get you wavelength in meters. 13548inch/sec is speed of sound in inches, which will get you wavelength in inches. 800Hz wavelength is 16.94"Adrian