Subject: Baffled by Baffles....
Posted by gfederys on Fri, 13 Jun 2008 17:02:45 GMT
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Good Morning, Are there any OB experts lurking about? I've looked up and read all I could, but still haven't been able to answer my question. I thought I had read @ one point, somewhere, that it's advantageous to mount the main driver off-center of the baffle instead of dead in the middle. What I can't seem to remember, or find, is whether you want more baffle between the left and right speakers, or more baffle to the outside of each speaker, or was this just in a pipe dream somewhere, and you want them mounted dead in the center afterall? All constructive comments, ctiticisms, ideas, discussions, and direction are welcome. Thanx to all participants in advance.

Subject: Re: Baffled by Baffles....
Posted by Gerry Co on Fri, 13 Jun 2008 21:36:13 GMT
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Hi gfederys,The way I understand it is you want to breakup the baffle step transition. It is even more imporatnt on an OB speaker than a box speaker because OB speakers don't just transfer halfspace to wholespace but they also transfer from constructive to destructive wavefront operation.That's my penny. Add another for 2 cents worth. Gerry

Subject: Re: Baffled by Baffles....
Posted by Martin on Sat, 14 Jun 2008 14:28:50 GMT
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As long as you are talking about a rectangular baffle (not square or circular) I don't think it makes that big of a difference. The location of the driver, offset or centered, will impact the ripple above the hump in the baffle's response. Compared to other anomolies such as the room, the crossover, and the driver's natural non-flat peaks and dips I think these ripples are in the mud. If you do bias your drivers towards one edge of your OB, and build a mirror image set, you can always swap left for right and try it both ways. Use the positons that sound best. Don't worry the small stuff, worry the big hitters in your OB design like relative driver efficiencies and woofer Qts.

Subject: Re: Baffled by Baffles....
Posted by gfederys on Mon, 16 Jun 2008 15:28:14 GMT
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Thanx Martin, I've taken those things into consideration. I also am going to ad a tweeter because the main driver needs a bit of high end "help". The tweeters were going to be be placed @ a 45 degree angle to the main driver towards the center, therefore the question about where to put the most baffle, inside or out. I didn't thoroughly explain what I was contemplating doing.

Subject: Re: Baffled by Baffles....
Posted by Martin on Mon, 16 Jun 2008 15:48:49 GMT
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"The tweeters were going to be be placed @ a 45 degree angle to the main driver towards the center ...."Why would you add this complexity? If the tweeter is firing forward then the design is a little more flexible with respect to placement. I guess I don't see the advantage to firing the tweeter at some angle and then listening off axis.

Subject: Re: Baffled by Baffles....
Posted by gfederys on Mon, 16 Jun 2008 16:14:41 GMT
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I'm sorry, the tweeter WILL be firing forward, installed flat on the baffle surface. BUT, instead of being directly ABOVE the primary driver, it'll be about 2 o'clock in relation to the primary driver on one baffle and 11 o'clock in relation to the primary driver on the other baffle. I guess this is becoming a case of one picture being worth a thousand words.

Subject: Re: Baffled by Baffles....
Posted by Martin on Mon, 16 Jun 2008 17:06:14 GMT
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OK, I think I understand the geometry. Why do you want to use this placement of the tweeters relative to the mid/full range drivers? What is it buying you in performance? If they were mounted vertically then you could offset both drivers and still have the flexibility to swap channels. I am not trying to give you a hard time, I am just curious what is driving you towards these design decisions. Maybe it is as simple as looks which is fine.

Subject: Re: Baffled by Baffles....
Posted by gfederys on Mon, 16 Jun 2008 17:35:58 GMT

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I don't perceive you're trying to give me a hard time and appreciate your replies. I wish I was better @ explaining so I wasn't wasting YOUR time. Since way back when, I always heard moving the tweeters slightly toward center improved the imaging. Whether this is true or an old MFG.'s tale, I'm not sure. I've been doing some preliminary OB testing on a pair of 18.5 X 18.5 baffles, mounted on speaker stands, so they're about 35" off of the floor. I run a small, powered sub/woofer to augment the low end. Currently the tweeters are mounted on some some small luan pieces on the baffle sides, since I was "hunting" for a tweeter to use. This allowed for quick switching and testing. I like the sound, and want to make some permanent, slightly larger baffles. I'm trying to see, (hear), if there are some ways to tweak these even more, without creating huge, floor standing baffles in the living room. That's why the original question about whether it's more advantageous to have more baffle on the inside or outside of the drivers. I guess another way to do it would be to mount them asymetrically, as you suggested, move them around to see if they sound better a certain way, then add the tweeters later.

Subject: Re: Baffled by Baffles....
Posted by Martin on Mon, 16 Jun 2008 18:29:53 GMT
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Sounds like you have a good plan of attack. It will be interesting to hear what you learn from your experiments.

Subject: Re: Baffled by Baffles....
Posted by gfederys on Mon, 16 Jun 2008 18:37:08 GMT
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Probably that I should have boughten an I-pod!

Subject: Re: Baffled by Baffles....
Posted by Martin on Mon, 16 Jun 2008 23:20:01 GMT
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Yea, my kids love their iPods. I like their iPods too because it keeps them quite in the car. Their generation has no interest in audio or equipment, maybe it is because the recordings of the popular music thay like are all acoustic garbage.

Subject: Re: Baffled by Baffles....
Posted by Duke on Wed, 18 Jun 2008 05:55:42 GMT
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Normally, I would say mount the drivers in the center.  The diffraction from the cabinet edge can cause image shift, but I think it's less likely to if both edge diffractions arrive at the same time (so the effect, if indeed real, would vary with toe-in).Now with a dipole, reducing bass cancellation might be the higher priority.  So for instance if your dipole is going to go right up against the side wall, well that side wall in effect extends the baffle on that outer side quite a bit.  In this case, you might want to offset the driver(s) to the outside (closer to the sidewall), which would increase the average wraparound path length as compared to center-of-the-baffle placement.  I'm in favor putting the tweeter over the woofer, rather than to the inside or the outside.  That way the drivers sum pretty much the same way in the crossover region across a reasonably large frontal arc.  With the tweeter at 2 o'clock or 11 o'clock, the drivers will sum differently depending on where you are across that frontal arc because their relative distance from your ears will change across that arc.Duke

Subject: Re: Baffled by Baffles....
Posted by gfederys on Wed, 18 Jun 2008 16:36:22 GMT
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Thanx Duke for the explaination and suggestions. Do you think there's any merit, though, to the "better imaging" thought by placing the tweeters towards the center? It seems like that was in vogue back in the early 90's by some manufacturers. By the way, if it matters, or is of any interest, the drivers are a pair of the original Fostex Sigma's, (with the "wizzer cone"), and EV T-35 tweeters.

Subject: Re: Baffled by Baffles....
Posted by Duke on Thu, 19 Jun 2008 11:04:13 GMT
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Offhand I can't think of why offsetting the tweeters towards the center would produce better imaging, but maybe it does.  If so, I think the imaging would also be more sensitive to speaker toe-in and listening position than with a vertical-in-line arrangement.Duke

Subject: Re: Baffled by Baffles....
Posted by kloss on Thu, 19 Jun 2008 16:11:30 GMT
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If drivers not dead centered its not a problem. Just avoid a square OB design unless you off set driver. You might want to add some wings to your OB to keep size down and bass up. Also if baffles not massive and braced driver will slightly move it forward and back this will smear image and reduce tebile a wee bit. I like my OB set with drivers center at ear level if fullrange slightly lower with a 2 way, mid driver centered in 3 way.

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Subject: Re: Baffled by Baffles....and congrates to Duke
Posted by kloss on Thu, 19 Jun 2008 16:15:00 GMT
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I perfer OB with tweeter in vert array. I find off set tweeters dont image as well if one moves out of sweet spot. And Duke congrates on your award you deserve and earned it. Almost brought a tear to my eye;)

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Subject: Re: Baffled by Baffles....
Posted by gfederys on Thu, 19 Jun 2008 16:46:39 GMT
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The baffles are going to be, (well, I ALREADY have the plywood so they ARE) 20" X 25" with just slightly radius corners for aesthetic purposes. They are going to be mounted to some 1.5" X 1.5" steel speaker stands I made a while back, and I plan on having the center of the mid/tweeter setup @ ear level. I was going to add 1" X 3" oak "wings" on the back, running the length of the baffle, for bass extension and OB bracing. I'm running the array on some "test baffles" right now, with a first order crossover and my 2A3/45 amp. VERY engaging and lifelike on jazz music and simple stuff. Thanx for all the replies about the offset tweeters. I guess I'll take the expert advice and put the array inline, one above the other. (tweeter on top). Once they're completed, the next step will be to look for a design and build a "box" for the 12" powered sub/woofer. Something more for detail and realism as opposed to a "hooptie" sound.

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Subject: elzndhpn
Posted by elzndhpn on Fri, 24 Oct 2008 21:57:50 GMT
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