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Subject: OPen baffle designs

Posted by [akhilesh](#) on Mon, 21 Aug 2006 13:12:50 GMT

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Hi everyone, My next potential project is an open baffle design coax. I am looking to do a 15" coax (a set of old alnico Univ sound drivers I have) in an opwn baffle. What should I be looking for? I glanced at Linwitz's pages, but they are way too detailed for me. My basic questions are: 1. Do i need to look at T/S params for this? 2. How do I calculate the dimensions of the baffle? Do I need the response curve? thanks for your advice. -akhilesh

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Subject: Re: OPen baffle designs

Posted by [Wayne Parham](#) on Mon, 21 Aug 2006 19:37:38 GMT

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That's excellent, Akhilesh. Please keep us posted with your progress. Open baffle speakers aren't my specialty, but I understand most prefer high Qts woofers.

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Subject: A couple of things

Posted by [wunhuanglo](#) on Mon, 21 Aug 2006 22:36:49 GMT

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1. Get a copy of The Edge baffle simulator (<http://www.tolvan.com/edge/help.htm>) - symmetry is not your friend. 2. You need EQ, so be prepared - some sort of DSP maybe. 3. A high Q is a substitute for too little amp power/control - bi-amp. 4. Read about Olsher's Basszilla - I've built four versions and the only drawback is too little Xmax on most mid drivers for "movie" levels. (<http://store.hifiauthority.com/olsherkits.html>). His crossovers or value priced DSP, like Behringer? No contest. 5. Pretty good reading at NaO (<http://www.musicanddesign.com/naomain.html>)

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Subject: Re: OPen baffle designs

Posted by [Jim Griffin](#) on Wed, 23 Aug 2006 00:07:23 GMT

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You might read about Martin King open baffle project.  
MJK Open Baffle Project

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Subject: Re: OPen baffle designs  
Posted by [akhilesh](#) on Wed, 23 Aug 2006 01:08:24 GMT  
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Thanks for the pointer Jim. I did read that one already (after I posted). Like all of MARTin;s work (and yours too I might add), well thought out & executed. -akhilesh

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Subject: Re: A couple of things  
Posted by [Retsel](#) on Mon, 28 Aug 2006 21:43:03 GMT  
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Dick Olsher relies on a 12 db/octave crossover for high passing the Lowther drivers. You may want to try a 18 db/octave crossover adjusting the bass driver to a 18 db/octave crossover as well. The second option is to crossover the Lowther at 200 hz instead of 150 hz.Retsel

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Subject: Good advice  
Posted by [wunhuanglo](#) on Tue, 29 Aug 2006 08:30:31 GMT  
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Actually I crossed over (and Eq'd)electronically at 24 dB/oct from 70 Hz to 200 Hz. The higher the crossover the worse the sound and the lower the crossover the more limited the output.I finally concluded that if you listen primarily to Leslie Olsher and/or small group works that tend to benefit from "polite" levels it's a very good design, easily executed unlike most Lowther horns. But if you want a speaker to do "everything" that isn't the path to the holy grail.

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Subject: Re: Good advice  
Posted by [Retsel](#) on Wed, 30 Aug 2006 20:25:26 GMT  
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I am still playing with my design, but I only have problems with one recording - Burmester's recording of Chinese drums. The Lowther is moving more than several millimeters and may be bottoming out. I tried a higher crossover which effectively eliminated the overextension of the Lowther driver even with the Chinese drums recording and in my case the sound was not as good. But in my case I know the reason why. My woofers are mounted in W-style open baffle boxes which tend to have resonances above 100 hz. Thus, the resonances from these woofers are what are causing the problem. I am confident that when I mount these drivers in a different box, that my system would sound fine with the Lowthers crossover over at a higher point.What

(sub)woofers are you using and in what enclosure are they mounted?Retsel

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Subject: Re: OPen baffle designs

Posted by [hurdy\\_gurdyman](#) on Thu, 31 Aug 2006 02:00:46 GMT

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Do you have any specs for those old University Sound drivers? I'm not familiar with them, but most drivers similar to them from that period had very low X-max and probably wouldn't like being eq'd. If they have a highish Q to begin with, they may not even need eq'ing. Without knowing the fs and the Qts, it'd be hard to figure out the correct baffle size. Fortunately, it's cheap to buy a sheet of 1/2 inch MDF and experiment. Dave

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Subject: Re: OPen baffle designs

Posted by [akhilesh](#) on Thu, 31 Aug 2006 02:09:44 GMT

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Hi Dave, the more I thought about it, the more I abandoned the idea right now of OB with that driver. IT has almost no X, when you psuh it you can see that. So your intuition/experience is right. It is a beautiful 3 way 15" coaxial. It came in a large sealed box. Large meaning around 2-3 cubic feet. An old Altec sealed box. The guy who sold it to me (some dude from tennessee) swore up & down it was one of the best drivers he had listend to. I am going to listen to it there (believe it or not I haven;t heard them yet) and then decide. I haven't measured them yet at all. It seems there are too many reasonable modern drivers around that are built for OB to muck around with vintage anymore. -akhilesh

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Subject: Re: OPen baffle designs

Posted by [hurdy\\_gurdyman](#) on Thu, 31 Aug 2006 02:48:08 GMT

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Hi Dave, the more I thought about it, the more I abandoned the idea right now of OB with that driver. IT has almost no X, when you psuh it you can see that. So your intuition/experience is right. It is a beautiful 3 way 15" coaxial. It came in a large sealed box. Large meaning around 2-3 cubic feet. An old Altec sealed box. The guy who sold it to me (some dude from tennessee) swore up & down it was one of the best drivers he had listend to. I am going to listen to it there (believe it or not I haven;t heard them yet) and then decide. I haven't measured them yet at all. It seems there are too many reasonable modern drivers around that are built for OB to muck around with vintage anymore. -akhilesh

Hi akhilesh, A 2-3 cu ft box really isn't a big box for a 15 inch driver. It's actually modest sized. That alone probably means the driver was designed to need plenty of help

from the air in a box. If you ever want to try vintage drivers on OB, try old EV's like the TRXB coaxials or the LS-8 and LS-12, or SP-12b. These should all work well on an OB. I've seen LS-8's go for under \$50 a pair on ebay. They are a bit cleaner sounding than the LS-12's but don't have as much bass punch. On OB's, all of these drivers tend to roll off under 70-80 Hz. I doubt if they'd like eq much, either. However, I occasionally punished my LS-12's with my h-k citation 16 (200 watts/ch) and they held up fine. The LS-8's would occasionally bottom out on some movie soundtracks. Made a big "crack" sound. Once I even tore the voice coil braided lead wire off! The volume was very loud for this to happen. Never had a problem with the 20 watt Scott or 15 watt Heathkit driving either of them. Today's new drivers are, in the long run, probably better suited for OB use, especially if you are into high powered stuff. Dave

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