Subject: Horn flares for compression drivers
Posted by juanstein on Thu, 03 May 2001 21:58:25 GMT
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Hi Wayne,I am still looking at your pi 7 and pi 4 designs. They sound like the solution I need for some live performance monitors. I will probably want to use your plans for those. I am still trying to figure out which direction to head for studio monitors. What I am trying to figure out is whether I would want to use the Lowther Oris horns or some high-quality compression drivers. At $1200 each for the Lowther drivers, I am in the range of some pretty sweet compression drivers, such as the TAD's. The main thing I like about the Oris horns is simply the spherical horn. I have not heard any good professional controlled dispersion front horns for compression drivers. Do you have any favorites for 1" throat compression horns? I would also be interested to hear which horn Mr. Salve used for his TAD pi 7's. The TAD 2001 compression drivers can be crossed over below 700 Hz. Thanks for all the information.John

Subject: Re: Horn flares for compression drivers
Posted by str8aro on Fri, 04 May 2001 02:06:02 GMT
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Edgar salad bowls would be nice for a 1" compression driver... They look nicer than an Oris when appropriately finished, IMO.John

Subject: Re: Horn flares for compression drivers
Posted by jsalve on Fri, 04 May 2001 02:33:19 GMT
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Hi John,I am still waiting for my Unity Horn form Lambda Acoustics. Before I decided on the Unity's I was seriously considering Sierra Brooks Horns for my TAD2001's, they have a small horn suitable for 800Hz XO point and larger 180Hz horns for 2in throat drivers. Last time I looked they have some horns on sale but I've been having problems connecting to their site lately.Jeff

Subject: Re: Horn flares for compression drivers
Posted by Wayne Parham on Fri, 04 May 2001 05:18:35 GMT
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My favorite horns provide constant directivity with 90 degree horizontal coverage and approximately half that vertical coverage angle. The reason is simple: This is where you want the sound. You don't want it directed at the ceiling or floor, but you do want it to fill the room and be uniform throughout the room. Another reason is that sound sources stacked vertically generate nulls above and below the forward axis, so it is desirable to limit vertical coverage within these nulls.With constant directivity horns, the sound sources are in phase at all locations within the horizontal coverage pattern as long as they're phased right on-axis. Summing is constructive at angles within the nulls set by the vertical distance between drivers, so it is best to set the nulls just outside the vertical coverage angle of the horns. It all comes together that way, with constructive summing at all angles within the pattern.Not all constant directivity horns are alike. There are several mechanisms for pattern control, so naturally there are lots of ways to make a CD horn. I personally don't care much for the ones with sharp angles, prefering instead those with smooth flare walls. A horn begins to narrow at low frequency just before it loses pattern control and widens way up. So many horns have the last section flare greater than the main body of the horn. I prefer a gradual curve to a sharp break. The edge causes a reflection which manifests itself as ripple in the response curve.I prefer horns that are large enough to provide pattern control, but aesthetics sometimes make a compromise necessary. Having a fairly high crossover point helps here, because horn size goes down as frequency goes up. In the case of the three Pi and four Pi speakers, matching directivity of the direct radiating midwoofer pins the crossover frequency to a range of about 1kHz to 2kHz. That is a good place to crossover anyway, for a lot of other reasons besides directivity and horn size.

Subject: Re: Horn flares for compression drivers
Posted by juanstein on Fri, 04 May 2001 17:58:27 GMT
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Hi Jeff! Is this a round-mouthed horn or another shape? I understand that Bruce Edgar and a few other people were making spherical expansion horns, but I haven't found any links except for Edgarhorn. I keep hearing about people buying his horns only, but by casual inspection of his site, I don't see any parts for sale. I will try to check out Sierra Brooks' site. Thanks for the info. Your

speakers sound like they are going to be fantastic. John

Subject: Re: Horn flares for compression drivers
Posted by Wayne Parham on Fri, 04 May 2001 23:25:52 GMT
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They are very attractive, that's for sure. I'd like to make a constant directivity asymmetrical 90 degree wood horn, maybe with a mouth termination radiused like the tractrix. Best of both worlds.

Subject: Re: Horn flares for compression drivers
Posted by jsalve on Sat, 05 May 2001 01:36:05 GMT
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John,Both Edgarhorns and Sierra Brooks are I believe tractrix horns. I can't connect to SB website but as I recall the biggest one is 140Hz horn and has 32" diameter. They're using TAD4001's down to 250Hz, that is one SWEET looking horn, if I have the dough I'll seriously consider it.