Subject: Help needed for old JBL D131 and new mr/tw horn
Posted by Jonathan Z on Wed, 10 Dec 2003 15:47:22 GMT
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I'm working on a project that will update an old console based JBL system (this was probably not factory JBL but custom). It currently contains a D131 and 075 with a first order JBL xover. I've been informed that the xover is probably set for 2500hz. Coil and cap are unmarked so I cannot confirm this. The problem with the system right now is that the 075 produces a very eratic response and the midrange clarity is poor.I plan to replace the 075 with a new modern compression driver (Radian 475) matched with a DDS waveguide. The combination has a usable frequency response of 800-20K, but requires a 4th order xover at 800 hz. I do want to cross as low as possible since I believe that will improve MR clarity. Based on the factory spec of the D131 (I do not have the drivers available for test right now) and the cabinet dimensions (2.52 cubic feet) the D131 will develop a very peaked response at resonance with a standard LR 4th order LP (according to Unibox). It seems in part that this is due to the size of the enclosure. I'd appreicate any suggestions for successfully integrating the two drivers. Also, I suppose, this begs the question why not use a Pi alignment. I admit that I'm not sure the tradeoff of the higher xover frequency would be beneficial in this case. Again, advice/comments appreciated.

Subject: Re: Help needed for old JBL D131 and new mr/tw horn
Posted by Wayne Parham on Wed, 10 Dec 2003 17:03:12 GMT
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Pi alignment has nothing to do with the crossover frequency. It is a ported cabinet alignment like B4, QB3 or C4.Maybe others will chime in, because I have no experience with your chosen Radian tweeter. I can only say that I would generally prefer to push a subsystem up in frequency than down, if a compromise in this regard has to be made. This is especially true of modern compression horns.

Subject: Re: Help needed for old JBL D131 and new mr/tw horn
Posted by Jonathan Z on Wed, 10 Dec 2003 17:52:41 GMT
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I had misunderstood. I had read your paper on crossovers and thought that is said that pi aligned speakers were 2nd order roll off for the LP and 3rd for the HP. I guess that was only referencing the crossover used in some of your speakers. I understood the advantages of choosing those slopes to be less interference between the drivers across a given 3d space. That seems attractive; however, I'd have to move the xover up higher. Can you give advice on how much of a difference this makes in sound quality and whether you think it would be worth the trade off in

potential MR behaviour? See addtl. data below. I have listened to the Radian driver and DDS waveguide and it sounds good w/ the LR 4th order at 800hz. I will not go lower though. With the D131, the JBL folks claim it goes up to 5K; however, I've not measured it yet (I'm helping someone out of my area). Given its a 12" w/ large aluminum dustcap, I'm expecting some nasty break up modes on the way to 5K. Certainly when I've listened to the system as is, the MR clarity is rather poor.

Subject: Re: Help needed for old JBL D131 and new mr/tw horn
Posted by Wayne Parham on Wed, 10 Dec 2003 18:16:43 GMT
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If the midwoofer doesn't perform well up high, then certainly that's a valid reason to crossover lower. It's all about design choices, some of which includes budget, device constraints and what-not. If the midwoofer doesn't work well up high and the tweeter can be run lower, then that pretty much makes the decision for you.
