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Subject: Re: Questions on Midrange Drivers

Posted by [Adrian Mack](#) on Tue, 13 Apr 2004 13:11:58 GMT

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Hi Garman! I don't find the 'entry level' Alpha driver to be a shortcoming. It's because of the horn loading which makes it sound so good, a lot better than when I tested it in free air (but with no box.... making the comparison pointless). In any circumstance, horn loaded, it is the best midrange I've ever experienced. It is so clean, you can really hear the distortion reduction the horn makes, direct radiators just cannot match what a horn can do. It's very pleasant and enjoyable to listen to. My choice on using it was mainly because it was one of the few drivers that worked in my application. Originally I had the intent to horn load a 12" driver in something like a 150Hz horn (Erik Foraker's 150Hz tractrix loaded with an EV EVM12L was very appealing). Unfortunately I found that no 12" driver would reach 2KHz in a horn within +/- 3db, nor any 10" drivers really according to computer simulations (limited by bigger mass, inductance, and greater phase cancellations in front chamber because of larger path length differences inevitable on a bigger driver). I looked at some 8" drivers, some of which went a bit past 1.5KHz but was still limited. The little 6" Alpha showed the most extended HF response, and in the smallest package. I've gotten it to +/- 2.5db from 300Hz to 2KHz in my horn, something which a bigger driver won't do. My statement about the pro drivers was just a quick general one really. As Bill pointed out it's not just a matter of needing more power and SPL, there's other reasons involved too. As for increasing output and power handling of smaller drivers, this can be done to an extent but you also become limited with what you can do at a point. Larger drivers can have bigger voice coils (less heating for given power level and higher temperature handling), more wire on the VC, room for bigger heatsinks, etc than what a smaller driver might have. I'm talking about something like a 15" vs 6" where the differences are large. 18" vs 15" on the other hand virtually have the capabilities and the same power handling ability. It's usually larger drivers that have higher strength motors/higher efficiency and more cone area,  $x_{max}$ , and as I've just mentioned power handling too for more output. It sounds like you want to use the Alpha as a direct radiator though? Adrian

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