Subject: A horn loaded bass 2 way for me?
Posted by BillEpstein on Thu, 15 Jan 2004 03:52:53 GMT
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I'm nuts about my towers but they don't have Martinelli Woodhorns. And I can't help but recall how awesome the bass was on the horn woofs Bill has from Dr. Cardinal.What could be done with an 8" or 10" woof like this Peerless: Peerless WooferPrice is right but would be better if it could run up to 1500 Hz and eliminate the need for a mid.So thinking about a 30" tall bass cab with Woodhorn set on top and NOT a cornerhorn. 10Pi is just too big and only need to get down to 40Hz. New direction, maybe?

Subject: Re: A horn loaded bass 2 way for me?
Posted by Mike.e on Thu, 15 Jan 2004 03:54:59 GMT
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JLH in high eff AA talks of 1" comp drivers going 500hz-19khz..i find that hard to believe and ive never heard/seen one-id like to.(i live in NZ so no chance)it has High Le :-(low Fs :-(In hornresp i can only get a narrow bandwidth of 80-400hzTry using ML UTIL and input what horn you want-it may tell you more optimal t/s specs to look for,also i may try this another time (work now)Cheers! home

Subject: Re: A horn loaded bass 2 way for me?
Posted by wunhuanglo on Thu, 15 Jan 2004 04:35:29 GMT
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According to Keele (hardly undisputed), the predicted roll-off point in going to be 2*Fs/Qts, which for the Peerless driver is very low, like 130 Hz. According to Fitzmaurice, it'll be good for another octave, but that puts it only up to something on the order of 300 Hz, still way too low.Check out something like the 3820 - http://www.phlaudio.com/main.htmlI would advise to to forget reaching up to 1500 Hz in a horn loaded two-way: it ain't going to happen from what I see. Your best bet is to go no higher than 400 or 500 Hz. BMS drivers an get you there pretty cheap: http://www.woodhorn.com/BMS/bms_compressiondrivers.htm

Subject: Re: A horn loaded bass 2 way for me?
Posted by Wayne Parham on Thu, 15 Jan 2004 06:44:17 GMT
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Hi Charlie!There are a few ways around the problem of upper frequency rolloff, and they all take advantage of properties that increase high frequency energy or concentrate high frequency directivity. Examples include electrical or acoustic EQ from collapsing directivity, rising power response or equalization networks.I don't know that I've ever seen a horn with peak-efficiency bandwidth greater than 3 octaves, but I've seen plenty of horns that worked pretty well over greater range. Some would probably say that the horn isn't acting as a horn over part of the bandwidth, and that may be true. But the point is that I think you can expect pleasant behaviour from a cone-driven horn up to and beyond 1500Hz, when designed for that purpose.A cone driver's beamwidth will actually become more narrow than the horn's flare at some point, which increases DI. Until voice coil inductance makes a final rolloff pole, the reactive properties of the motor/diaphragm system may cause it to have rising response. Breakup modes also increase upper frequency output - Smoothly controlled breakup modes have been purpose-designed in full range and extended range drivers for decades. So the total effect of all these forces can generate on-axis response that is flat well above mass-rolloff.Essentially, the driver of a horn becomes the most significant part of the equation at high frequencies. At these very high frequencies, the system behaves differently than it does in the horn's peak-efficiency band. But it is an option to consider. I've built many large horns with drivers having rising response, and the horn almost acts like a response modifier, bringing up the bottom end to match the top.I've found this approach to open up several interesting possibilities, and lots of very pleasant loudspeakers were built as a result.Wayne

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Subject: Re: A horn loaded bass 2 way for me?
Posted by GraemeG on Thu, 15 Jan 2004 07:07:36 GMT
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If you only need to go down to 40Hz, then probably look for driver with Fs of around 60Hz and small dia (no larger than 8"). The lowest moving mass driver you can find will probably get you there in one go.Cheers

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Subject: Re: A horn loaded bass 2 way for me?
Posted by Adrian Mack on Thu, 22 Jan 2004 13:38:53 GMT
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Don't think you'll get 500Hz out of a 1" device. Resonance is usually around 800 to 1.5KHz, so I don't really see that happening. Especially consider distortion down this low from a 1" exit will be higher, and the smaller throat will increase throat distortion at these lower freq's. Most 1" horn flare's dont even provide loading to 500Hz; the JBL 2370 claims 630Hz full horn loading and its already a pretty large horn, but I'd probably want to run it 800Hz as minimum to keep distortion low. Get a 2" device though and you'll be set!BMS 4590 :-)
