Subject: Pi design and wooden horns(Edgar & Martinelli)
Posted by spkrman57 on Sun, 20 Apr 2003 10:17:59 GMT
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Hey all! I am finally regaining my normal schedule after that wonderful weekend in Lima at the MAF. It's really nice to come home with new toys, I have hooked up my Altec 806 drivers to the new horns I have now. Here is my initial listening observations between the horns. The Edgarhorns are round tractix horns that I picked up from the good Dr at the show. These are yet unfinished (stain/etc), but I will get to that in the future sometime. The Martinelli horns are rectangular horns that are unfinshed also, but I have to play with both of these before I will get them finished. I am using my standard Pi crossover (1.6khz) with JBL 2226J's. My first observation is the Edgarhorns are very directional compared to Martinellis. The round horn almost reminds me of a domed driver with very high efficiency, but drops quickly off-axis". On the up-side of this, when the horns are toed-in to the sweet spot, incredible energy to conveyed to the listener, the sweet spot is small however and I tend to like these for single-person listening. The Martinelli horns are the choice when a larger listening is desired(read that as more than one person listening at one time), the sweet spot is much larger and doesn't lose as much off axis. I have found that these 2 horns each have their merit. These horns are as different as they are the same, directionality, on/off axis response are the differing factors. Now for the real eye opener for me, I have been using Altec 811Bs/511Bs in the past. I may have been stubborn in my approach that the ringing did not affect the sound quality. What I do know is that the wooden horns are superior in that they excel in what they don't do!!! They don't add as much coloration as the aluminum horns do. But, since the midrange is not as "hot", the high end becomes more tight and clear. I am still playing around with everything yet, I envy you folks with large rooms to play in, my Living room is small and not acoustically friendly, so I use some sound dampening and other tricks to get the best out of the room that I can. In conclusion, I would like to thank Dr Bruce Edgar and Bill Martinelli for helping me get one step further into better sound. The wooden horns have made a dramatic difference, now I will find new homes for my old Altec horns, as they have been relegated to "Backup" duty!!! Bmar, sorry to work you so hard on the horns, how is the Dyanco amp running for you??? Dr Edgar, thanks for answering my never-ending questions, most people at the MAF know that I don't run out of steam that quick when I am on a roll. Maybe I should change my moniker to "Motormouth" Cheers all :-)

Subject: Re: Pi design and wooden horns(Edgar & Martinelli)
Posted by Robert Hamel on Sun, 20 Apr 2003 11:50:15 GMT
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Thanks for the insight. I was interested in both horns but if I came home with anything from MAF I would not have been good. I have to downsize some gear. That JBL table was torture!!

Subject: Re: Pi design and wooden horns(Edgar & Martinelli)
Posted by Wayne Parham on Sun, 20 Apr 2003 16:43:40 GMT
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Great write-up, thanks!

Subject: Re: Nothing sounds like real wood
Posted by bmar on Sun, 20 Apr 2003 22:25:17 GMT
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Hi Ron,I had a great time at Lima and am glad I got the chance to meet you. I'm happy your getting around to doing a few things with the horns you got and thanks for the input on what you hear from tham them all. One small note, the 17" horns you got from me are a exponential horn that can be crossed as low as 800hz by my recomendations. I have tested these horns with some drivers that have lower frequency output and the horn will give good results to 600hz. So for that reason I label the 17" horn a 800hz model. Take your time blending in the throat to the horn or you might notice a little peak. Have fun finishing all those horns too! The Dynaco is sounding very good. I might play around and mod it a little but I'm not in a hurry to mess with it. I have it set up with the same Arezzo speakers I displayed at the show and I listen to something almost every day using it. Bill

Subject: I am born again - a wood convert
Posted by spkrman57 on Mon, 21 Apr 2003 00:22:27 GMT
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Bill, I would try the horns at 800hz except for the JBL 2226's are hard to deal with below that natural 2khz/20db/oct rolloff. I asked Wayne to think about a first order for the 2226's that would work nicely at 800hz. With second order crossover and zoebel on the woofer, the dynamics seemed sluggish, so no high order for me on them. I already have the PE 800hz hi-pass crossover and resistors ready, just that 2226 crossover problems to deal with.I really do like these horns, my Altecs are in the basement already :-) Cheers, Ron

Subject: First-order low-pass for speakers
Posted by Wayne Parham on Mon, 21 Apr 2003 00:53:45 GMT
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You can make a first-order low-pass filter for your 2226's easily enough - Just put a Zobel damper across the woofer and a series coil will then act as a first-order filter. I like to run 'em straight out, using a series coil without a Zobel in a quasi-first-order arrangement, which is basically no crossover at all. But it's no sweat to make a real first-order filter for these woofers if you want it.

Subject: Re: Pi design and wooden horns(Edgar & Martinelli)
Posted by Tom Brennan on Mon, 21 Apr 2003 06:50:43 GMT
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I went back to the Altec 511B after owning 550hz Edgar saladbowls. The Edgars were nice but in the end I preferred the Altecs, perhaps because with the Edgars I couldn't cross at 500 but could only go as low as 700. In any case the Altecs sounded more alive to me.

Subject: Re: First-order low-pass for speakers
Posted by spkrman57 on Mon, 21 Apr 2003 12:09:16 GMT
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Wayne, I must have missed the boat on this one, but I thought using single order crossovers that you don't need zoebel, but for higher order crossovers you do, My objective is to run my 2226 at 800hz to match up with my 3rd order crossover on the horns. So I am confused now as to which way to go about it. I imagine I should go back to 2nd order and zoebel for the bottom end, maybe I did something wrong the first time I tried to use the 2226's with 2nd order/zoebel. Thanks Wayne and regular posters here on this forum, Ron

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Subject: Re: First-order low-pass for speakers
Posted by Wayne Parham on Mon, 21 Apr 2003 12:57:45 GMT
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For a single coil to act as a first-order filter, the load must be purely resistive. Since the speaker is reactive, a Zobel is required to make the load approximate a resistance near the crossover frequency. Otherwise the series coil acts more like a voltage divider than a crossover, and that's why I call it a "pseudo-first-order" filter. High-pass first-order filters are usually improved with shunt resistance too - They will definitely work as a filter, but without shunt resistance, they suffer from peaking. Glance through that handout from the crossover seminar and you'll see what I mean.

Subject: Re: The highs, you like
Posted by bmar on Mon, 21 Apr 2003 13:12:16 GMT
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Hi Ron,I'm not saying you "should" cross the horns over any lower than what your using. I was just saying you can cross down to 800 if you wanted to. I Like using a 1200hz-1600hz crossover myself. You'll find the horns have a real nice top end that is nice and natural, and not a phony ringing sound. I put my 811's in the basment too, then I sold them! Did you find me a 1505 yet?! Bill

Subject: Re: Pi design and wooden horns (Edgar & Martinelli)
Posted by Wayne Parham on Mon, 21 Apr 2003 14:35:18 GMT
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I agree with you about Altec horns in many ways. Measurements show them to be extremely flat on-axis, and they sound good too. They are physically large, so they can be crossed over low. And they distribute energy with greater dispersion side-to-side, which keeps from wasting energy on the ceiling or the floor. They're a great horn for a large two-way loudspeaker, in my opinion.The only problem is their collapsing directivity. I don't mind it so much in the vertical plane, but would prefer constant directivity in the horizontal plane. An interesting read is the AES paper called "Improvements in Monitor Loudspeaker Systems," written by David Smith, Don Keele and John Eargle. The paper talks about this kind of design using a CD horn, and discusses the crossover region, directivity issues and other important features of a large two-way loudspeaker.