Subject: Fitting corner horns into a multi-use room
Posted by Tim Barnes on Sat, 14 Apr 2007 04:08:17 GMT
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Hi Wayne,I've been admiring your site and your generous engagement with the community over a few months. Now I'm interested in replacing my very inefficient Thiel CS3.6 speakers with a pair of your Pi Fours or Pi Sevens (and moving to smaller amps - possibly Bottlehead Paramour II eventually, but my Music Reference RM 9 initially). My living room is populated with built-in bookcases and a grand piano, as well as couch etc.It seems from other posts that the Pi Fours are more flexible with respect to room location, but that the sevens will yield better sound if they can be made to work in my room. Am I right in that conclusion? Or is the seven mostly about increased efficiency?My dilemma stems from the fact that my only available corners currently have built-in bookcases on one side each, and a baby grand piano arranged between those two corners with seating opposite. Is it reasonable for one side of the horn to be up against the bookcases, or would I need to build a mini-wall to complete the horn loading? If so, how big? This placement would put the horns back with the piano sort of sticking out between. The wall is about 15' wide (the speaker wall) and about 18' deep. Ceilings are high - about 10-15 feet (sloping). Or should I just stick with the Pi Fours and give myself more choices?Thanks for your help,tim

Subject: Re: Fitting corner horns into a multi-use room
Posted by Wayne Parham on Sat, 14 Apr 2007 14:53:01 GMT
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don't contribute a sound of their own (buzzing or resonating). Also note that the strings and sounding board of the piano will produce sympathetic vibrations, which may or may not be distracting to you. If you already had speakers in that room, you should already know whether it was a problem or not.The cornerhorn arrangement is about sound quality as much as about efficiency. By placing a horn into a corner, sound radiates into eight-space. This increases the effective mouth area of the horn and smoothes its response. It also increases SPL by focusing the sound in a smaller area, and enforces a 90° radiating angle, set by the walls. When all horns (bass, midrange and treble) have the same 90° dispersion angle, the sound field is uniform through the room. You can walk anywhere in the room and hear the same tonal balance, not just in the "sweet spot." Since sounds are reflected within the room, off-axis tonal balance is important, making a uniform reverberent field. So the cornerhorn arrangement improves quality of sound by providing a better acoustic load for the horns and by generating a uniform reverberent field, in addition to increasing efficiency, dynamic range and SPL.

Subject: Re: Fitting corner horns into a multi-use room
Posted by Tim Barnes on Sat, 14 Apr 2007 15:27:40 GMT
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Thanks for the quick reply. I don't think the piano has been a problem so far - and in any case I don't think there's much I can do about it as we like having the piano in there and don't have another room that would be suitable. Currently my speakers are right in front of the piano and I'm not aware of any adverse effects (perhaps I just have cloth ears). With the more uniform sound field should I expect more or less "imaging" than I would have with a more traditional out-in-the-room arrangement?Next question: It seems that all the 7 Pi speakers are identical except for the woofer - is this right? If so, are the sound quality differences between them relatively smaller than between the two-ways where the woofer is crossed over higher? I'm trying to think through the economic tradeoff... I like to listen at moderate levels with headroom for the climaxes, but I'm not often looking for the levels of SPL your systems seem capable of.Finally, could you send me a copy of the 7 pi plans, please?I appreciate your help,tim

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Subject: You've got mail!
Posted by Wayne Parham on Sat, 14 Apr 2007 15:34:23 GMT
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Each model is different, but the cabinet for the bass bins in the Stage and Professional Series are

cornerhorn, the highest quality model.Imaging is such a subjective term. It is also affected by music source as much or more than any other thing. But one thing can be said for sure of constant directivity speakers, the imaging is more uniform across the listening field. You don't have to be exactly in one spot for things to "click in" like speakers with non-uniform directivity. Imaging is great over a larger listening area.

Subject: Re: You've got mail!
Posted by Tim Barnes on Sat, 14 Apr 2007 16:22:15 GMT
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Thanks for the drawings. Lots of planning to be done. Am I right in concluding the top of the midrange box is flat and the elevation is a perspective of some sort? I think I can make this work after preliminary discussions with my very tolerant wife. (Her suggestion was to mount them upside down at ceiling level - probably won't happen!The good news is that the Thiels are already huge and sit out in the room taking up space - even the not-insignificant sevens will be less obtrusive.I'll scan the forum for construction tips and pictures.tim

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Subject: Re: You've got mail!
Posted by Wayne Parham on Sun, 15 Apr 2007 03:21:30 GMT

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The cabinet for the midhorn is flat on top and bottom, yes. It could be made in other shapes, but that shape works best for this application. When scanning the forum for construction tips, here are a couple posts that may be of interest to you:Cabinet bracing and other exciting informationRubber Ball Brace

Subject: Re: You've got mail!
Posted by Tim Barnes on Sun, 15 Apr 2007 04:20:39 GMT
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Thanks - useful links. I'm working on layout on 4x8 sheets of 3/4" birch ply...It looks as though I can get one bass horn onto a single sheet and the whole project I'm hoping will fit onto three with mitered joints for the cabinets.I've ordered an EZ Smart cutting system to help with the construction for this and other woodworking projects. My last furniture project was done on the table saw and I don't want to wrestle with full size sheets that way again!That does raise another point - the birch ply sold by Home Depot does seem to have some voids. They are never more than a single layer thick, and seem to be relatively small - a few inches long. Is this a big problem? The more expensive alternative is 5x5 baltic birch which I believe is void free.I haven't yet found

Subject: Re: You've got mail!
Posted by Wayne Parham on Sun, 15 Apr 2007 07:50:21 GMT
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Definitely don't go with that cheap five ply stuff. Voids potentially have debris in them that will buzz. The ply also tends to separate, which will also buzz. You're building a high-quality cabinet,

Subject: Re: Pi Sevens construction
Posted by Tim Barnes on Sun, 15 Apr 2007 20:21:23 GMT
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The ply I've been using has a lot more than 5 layers - but it's not completely void free, so I'll look for the better quality.At Southern Lumber this morning they offered me 4'x8'x3/4" Baltic Birch ply for $220 a sheet! But it's clearly a better product...Here's a picture of what I've been using for my other projects - this is a layup of two thicknesses of 3/4" for a shoe rack.

Subject: Re: Pi Sevens construction
Posted by Wayne Parham on Sun, 15 Apr 2007 20:57:49 GMT
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I see, yes, that has more than 5 plys, so it's not that stuff but I still see some voids and that's what concerns me. It isn't the void in and of itself that bothers me - It's the debris that can be in the void that's the problem. It will cause the cabinet to buzz, rendering it virtually unrepairable. Some have drilled into damaged wood from the hidden side (inside) and injected with epoxy to fill a buzzing void, but it's tough to do well because you're pressurizing the gap, which tends to prevent the glue from filling very well. On the other hand, if the wood is durable and doesn't develop a buzz, then everything is A-OK. It's mostly a problem on labor-intensive (expensive) cabinets, either because of build complexity or finish quality. You don't want to have to scrap a cabinet due to cheap lumber.

Subject: Re: Pi Sevens construction
Posted by Tim Barnes on Sun, 15 Apr 2007 23:55:29 GMT
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Point taken. I'll keep working on a suitable source of supply.Thanks for the quick answers and good advice.tim