Subject: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Fri, 20 Apr 2007 02:00:46 GMT
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Hi,has some of you a picture of an hybrid Pro 4 + seven midhorn and tweeter?Has this arrangement the tweeter in the bass bin or will better in the seven style?(not necerarelly with wooden horn at first, I guess)Best regards and thanks in advantage,Beto

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Paul C. on Mon, 23 Apr 2007 20:18:03 GMT
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Hi, Beto... I am presently building 3 pair of Pi speakers.(1) I am building a pair of 4pi Theatres for my own use.(b) I am building a pair of 4pi Theatres for my older son for his library/office/listening room,(iii) and building the 7pi-18's for his living room. Presently he does not have two adjacent corners to use the 7pi corner horns as designed. What Wayne suggested to me was to build bass bins identical to the 4pi Theatre cabinets, same ports, but simply put the Eminence Magnum HO 18's in these cabs instead of the Theatre's Delta 15's. Presently I am in the process of cutting wood for three pair of cabinets 36" H x 24" W x 18" D. I will also build the proper 7pi-18 bass corner bins for my son to later simply remove the woofers and crossover from the 4pi bins and put into the corner horn bins.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Tim Barnes on Mon, 23 Apr 2007 21:28:24 GMT
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Hi Paul:What kind of wood are you using for all those speakers and where did you get it? I've been pricing baltic birch and getting prices of over $200 for A/A and around $80 for BB/BB in 4x8 sheets (looking in the San Jose area).Thanks,tim

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Paul C. on Mon, 23 Apr 2007 21:57:13 GMT
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11-ply birch veneer cabinet grade ply, I pay about $48/sheet.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Tim Barnes on Mon, 23 Apr 2007 22:07:08 GMT
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Thanks - is it void-free? Wayne has been counselling me to be careful about buzzing caused by debris trapped inside the voids in the ply I got from Home Despot.tim
My ply (with picture)

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Mon, 23 Apr 2007 23:50:18 GMT
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Hi Paul,thanks for answer.I am returning to this proyect so most of the conclusions are on the forum. In the meantime I have done some other DIY proyects and upgrades.I believe that I wil use JBL 2226H instead of the 18" JBL, but I like to use a midhorn. I guess I will obtain the most of mid fq and bass extension this way. Since I do not have corners to place properly the pro seven Pi, I have take Wayne advise to use the Pro 4 formula, but with 3 drivers. I have a tube SET amp and one of its wonderful characteristic is the gloious mids. So, I supose that I have to build the seven Pi mid enclosure and just add to the top of the 15" JBL and Eminence tweeter, both in the same enclosure.On those days I have watch some render or picture with the tweeter horn outside the bass bin, so that's why I'm wondering wich way is the better solution, but I can't find it now.Also, dis you know how much low extension I can get if I use the 18" in this configuration (bass+ tweeter and the mid horn)?Do you beleive that baltic birch was better sounding material than MDF? Here I just can get marine or normal pine plywood (plenty of voids) , not baltic birch, so I will use MDF. Best regards,Betop.s. wich technique are using to cut and stick each panel?

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Paul C. on Tue, 24 Apr 2007 00:52:30 GMT
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As far as I can tell, yes.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Paul C. on Tue, 24 Apr 2007 00:59:55 GMT
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Ply is lighter and stronger than MDF. With very large and heavy drivers MDF does not hold up

well. I just find ply to be the better material. For you, MDF is probably the better choice.I have a plywood cutting jig I made that works well. Click the attached link. You will have to click on each image icon to view the photos if you are not registered at that site.I use aliphatic wood glue with bats and screws, screwed from the inside so they don't show. I cover the ply edges with "birch tape". Then sand, stain, and apply several coats of hand rubbed tung oil.
http://audiokarma.org/forums/showthread.php?p=1027581#post1027581

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Tue, 24 Apr 2007 14:53:24 GMT
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Hi Paul,thats on the mechanical side, buts what about the sonic properties?Well, whatever to be the answer, I can-t get baltic birch plywood here. Maybe I can use as a front panel, to get a strong hold for heavy drivers, a pine board with finger joint technic, to get a better material for mechanical issues.(or maybe some other wood)regards,Beto

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Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Wayne Parham on Tue, 24 Apr 2007 15:39:04 GMT
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The main thing here is we don't want voids. Actually, it isn't the void that concerns me so much as the debris that can be contained in the void. That will cause buzzing. Separated plys can buzz too. Those are the things we are trying to avoid.If the cabinet you are building is labor intensive or has a fine wood finish, then it would probably be a costly disappointment if a buzz developed and you had to scrap the box. Buzzes can develop years later, when plys separate or debris breaks loose inside a void. Sometimes, if a buzz develops, a small hole can be drilled in the cabinet interior into the section of the wood where the void or ply separation is. You can sometimes inject glue into the hole and repair the damage, fill the void or reattach the plys. But it's probably better to reduce the risk of failure, starting with a high-quality wood to begin with.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Tue, 24 Apr 2007 23:12:01 GMT
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Hi Wayne,thanks for answer.Do you believe that MDF has good enough sonic properties comparing with other woods (including plywood boeards)?And last, I am wondering if will be better to place the tweeter inside or outside the the bass bin, for a 4 Pi pro, following the 7Pi with no corners arrangement.Regards,Beto

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Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by Wayne Parham on Wed, 25 Apr 2007 01:20:44 GMT
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The mouths of the midhorn and tweeter must be flush and physically close. The midhorn should be above the woofer and within a couple feet of it. Within these constraints, you can place the components wherever suits you best.As for wood, acoustically, MDF is great. It's made of dust from many fibers bound with glue, so it's inherently non-resonant. But it's not very durable as a piece of furniture. Even if you never get it wet, in humid environments the wood will swell enough that butt joints will show through veneer - you'll see the seams. I think MDF is better acoustically than the best plywood, but it's heavier and less durable. I'd never build a basshorn out of it because of that, but if you use the right joints, it makes a good home hifi speaker.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Thu, 26 Apr 2007 01:31:10 GMT
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Hi Wayne,Nice to hear that is a very good acoustic material. well, many speakers builders use it, of course. I'm agree also with you. I know this material used in furniture: must be used just in controled miousture enviroments but is very easy to work with. I have used extensivelly in my job (architect). I believe that used with veneer will looks very well.Regards

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by dB on Mon, 30 Apr 2007 10:58:13 GMT
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I am pleased to know you are an architect too.Please check the website for WISA Wood Products and WISA-Form Birch
(http://w3.upm-kymmene.com/upm/internet/cms/upmcms.nsf/$all/bd7ff5a1982377fac225704600368554?OpenDocument&qm=menu,4,5,0&smtitle=Plywood)
WISA Wood Products

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Tue, 01 May 2007 14:03:46 GMT
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Hi dB,thanks for the link. Very impressive products. Here we have also phenolic plywoods used for concrete work (now I'm use it) , but I'm affraid that ours are made with pine. The point is , as far as I know, veneers fibers homogenity to avoid unwanted voids.I will check tomorrow at work, how good can be our phenolic boards for speakers matters.Having also MDF here, of course, it will be a nonsense import baltic birch or othe fine board, by the way. Maybe we can add some sealing product before apply the venners to increase moisture protection. Also, we can use some poliurethane treatment over the venners to add the wanted finish and protection.Best for you.p.s. wich Pi speakers do you have or proyect it?

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by dB on Tue, 01 May 2007 19:57:56 GMT
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Check also maritime plywood.If you work with a CNC factory they can do joints and (I know about 3 different types of joints they make previous of) finishings with venners the way you want. They also work with MDF and plywood. The phenolic boards might work well, if well insulated against vibration (this is only my guess). There are plenty of colours and finishings. There are plenty of boards they use for outside, including maritime ply and phenolic, in construction.

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Tue, 01 May 2007 23:23:04 GMT
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Hi,yes, also I have used marine plywood. The only downside is the voids, as Wayne stated as a prossible problem. If I can get a plywood with no voids in its veneers I will get it, but I don't believe that I can find here made in pine. Pine has more separate fibers, so is easy to chip, ergo we have voids. MDF, as I have noted is a very wood material with some limitations, moisture and poor mechanical to use with heavy drivers, but we can control this with some products and also we can use a plywood or a wood board for the front panel to fix the drivers, then we can do a sandwish to get an interior MDF layer (just a thought).I will check also for the CNC labor, but maybe will be sufficient with a router. Best regards

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Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by dB on Fri, 04 May 2007 10:39:31 GMT
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Good.(What country is yours, if you don't mind me asking?)Do you mean they don't have too

many types of wood there?When you use (glue) different types they may warp, unless you make a sandwich. Note: Also, I was thinking in good wood from old buildings (villas) like the planks from the stairs (and wide-plank flooring & windows, old and well dry) sometimes in exotic wood. Sometimes you may have a second resource beside new wood. They are now using old wine casks for speakers, recycled.you can also read this interesting paper (in making guitars, I didn't read it yet): The Quest for Tonehttp://www.mtdbass.com/articles/quest_for_tone.pdf(pic. from http://uk.gizmodo.com/2006/07/11/pioneer_pure_malt_speakers.html)
RECYCLED Pure Malt Speakers

Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by beto1 on Sat, 05 May 2007 00:10:50 GMT
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Hi dB,I'm in Chile, where are u?Here we have a lot of wood, specially at South provinces. We export a lot of wood, well also very good red wine, btw. But I don't have good luck with plywood boards, because are made with just pine. Ihave inspect the phenolic plywoods at my work, and is a lot more homogenic that common plywood, but still have some voids.I like a lot the building restoration work, recycling old extremely beatufull wood developed from old houses. Some architects use some portion of interior naked wood frames, puting away the wall cover (clay in some cases), getting visual continuity spaces. There are lot of (now very expensive, but 100 or more years ago, that was normal) old houses waiting with its treasures inside the walls and on stairs and others elements. I have work with recycled wood on modern clay houses using wood frame. Earth is a very good material.Maybe some of this woods can work fine for speakers needs. The question is wich ones, because I know that some speakers builders talk about the enclosure as instruments that need the fine tuning of the aproppriate wood in the way that luthiers talk about fine artisanal instruments. I don't think that all beatifull wood can serve to our purpose because we need to avoid unwanted resonances, as far as I know. Thats why the no-at-all-aristocratic MDF was a good speaker material.Maybe there are some fine examples of exotic wood that can stole the place of the proletarian MDF, but who knows if worth.Best wishes

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Subject: Re: Pro 4 + seven midhorn and tweeter
Posted by dB on Sat, 05 May 2007 01:22:03 GMT
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Yes.(I am in Portugal)You may have nice wood from Brasil also?
PERI BRASIL - Birch Plywood

Subject: Re: Pro 4 + seven midhorn and tweeter

Posted by beto1 on Sat, 05 May 2007 01:41:30 GMT
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Hi,thanks for the link. PERI is a german company that are present in Chile and I have discover that import, I guess, some of their plywood boards for concrete work at a very high level of long lasting.I will check this on monday!Regardsp.s. I like fados