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Subject: Folded Horn Bracing

Posted by [gfederys](#) on Mon, 10 Apr 2006 12:45:39 GMT

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Hi All, I'm finishing/refinishing Loather Fidelio's. The cabinets sound very sound doing the "knock on wood test", all but the mouth of the horn. It seems to reverberate. I was thinking about putting in a horizontal brace, let's say 1 X 2, with the leading edge rounded or beveled to avoid standing waves and help dispersion. My thought was to avoid adding needless extra weight to the already heavy cabinet by doubling up the sides. The material used was HDF. Will I be helping or hindering the sound of the cabinets by bracing the mouth of the horn in this way? The drivers are Loather DX3's. I would appreciate thoughts, comments, and suggestions. Thanx everyone.

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Subject: Re: Folded Horn Bracing

Posted by [Bill Wassilak](#) on Tue, 11 Apr 2006 16:06:22 GMT

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Better to brace, especially at the mouth since that's the output of the horn.

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Subject: Re: Folded Horn Bracing

Posted by [Wayne Parham](#) on Tue, 11 Apr 2006 17:58:45 GMT

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Yeah, plus that's where the wood panels become largest. Inside near the throat, the panels are small enough braces might not be needed but on the large end, they definitely need braces.

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Subject: Re: Folded Horn Bracing

Posted by [gfederys](#) on Tue, 11 Apr 2006 18:57:55 GMT

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Will doing it this way affect the performance of the horn?

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Subject: Re: Folded Horn Bracing

Posted by [Bill Wassilak](#) on Tue, 11 Apr 2006 19:03:00 GMT

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No not at all, the wavelengths coming out of that part are to large to have any effect at all.

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Subject: Re: Folded Horn Bracing  
Posted by [akhilesh](#) on Tue, 11 Apr 2006 20:53:42 GMT  
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The bracing will work, based on my readings. Another thing that will work based on my experience is if you put some filler around the mouth of the horn (anything that adheres and has wood spackle-play dough consistency will do). You can then sand it down and paint it the color of the box. This should allay any fear you have of hindrance to sound waves. -akhilesh

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Subject: Re: Folded Horn Bracing  
Posted by [gfederys](#) on Wed, 12 Apr 2006 14:42:17 GMT  
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Thanx all for the really helpful hints. Since the cabinets are made of HDF and I plan on painting them, I'm going to router, seal and sand, seal and sand, seal, etc, all the exposed edges with West Systems epoxy and filler. That should take care of akhilesh's suggestion. I still think they'll probably need a horizontal brace in the horn mouth as well. There are 2 corners per cabinet that are hollow and probably should be filled. I could drill a small hole and fill them with something. Any suggestions?

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Subject: Re: Folded Horn Bracing  
Posted by [Wayne Parham](#) on Wed, 12 Apr 2006 15:16:12 GMT  
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You can fill with expansion foam but be careful! Expansion foam can easily burst a cabinet as pressure builds so don't use too much.

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Subject: Re: Folded Horn Bracing  
Posted by [gfederys](#) on Wed, 12 Apr 2006 15:25:38 GMT  
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Thanx. I guess 2 more questions now. How much is enough? (Too much is pretty self evident. Is the stuff pretty acoustically dead? Do one of the do-it-yourself chains carry something like this? Any brand names better than the other. Someone else suggested sand.

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Subject: Re: Folded Horn Bracing  
Posted by [Wayne Parham](#) on Wed, 12 Apr 2006 15:59:04 GMT  
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You can buy cans of foam at local hardware stores. There is an expansion ratio listed on the can, so that will help know how much to use. But if you fill blind, you'll still be doing it by the seat of the pants. It helps to have a couple of access holes drilled (or even more for large areas). That way you can fill in one and watch through the other. It also allows accidental over-fill pressure to be relieved by exiting the holes rather than bursting the panels. Once the foam has set, glue in wood plugs that match the finish grain and you're set.

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Subject: Re: Folded Horn Bracing  
Posted by [gfederys](#) on Wed, 12 Apr 2006 18:43:38 GMT  
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More good advice. You guy's are alright! Now if I can just get you to sand.....

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Subject: Re: Folded Horn Bracing  
Posted by [Wayne Parham](#) on Thu, 13 Apr 2006 15:06:50 GMT  
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Sand would be good too, but it gets kinda heavy. I guess in the little horns it isn't too heavy though. But another good thing about expansion foam in addition to its light weight is that it puts pressure on the panels and preloads them, making them stiff.

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Subject: Re: Folded Horn Bracing  
Posted by [gfederys](#) on Tue, 18 Apr 2006 11:24:49 GMT  
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'Morning All, Well I bought a can of the "Big Gap Filler" on Friday and that night met with some

DIY audio people who told me horror stories of the stuff pulling plaster board away from 2 X 4's. I returned it on Saturday and a construction friend of mine gave me a 50 pd bag of silca sand. After hauling THAT around for a day, I decided it was too much weight and returned it to him. Late last night I settled on a can of "Small Gap Filler" guaranteed NOT to bend your window frames. I'm going to try it today after work. I also had a chance to make some bracing for the horn mouth and other spots in the horn that I feel would resonate. Some time this week I hope to find time to glue everything in place. I appreciate evryones suggestions and help. A major catastrophe was avoided through the sharing other people's knowledge and experience. Thanx all.

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