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Subject: Portable Metal Resonator for Musical Instrument

Posted by [Ebirah01](#) on Thu, 04 Aug 2011 20:06:34 GMT

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Hi there ART folks!

I'm trying to sort out a new bit of kit for my next tour later this year. I'm attempting to attach a large metal string to my drum kit that I can bow (with a cello and/or bass bow) and I need to be able to amplify it naturally.

I was thinking of wedging a large sheet of metal between the end of the string and the stand on which I would be suspending the string, but that hasn't worked so well thus far. I want to get a sort of metallic cello sound or bowed saw sound out of it and I can almost get that, but not without the correct resonator.

Any thoughts? It can't be too big because I have to be able to take it on a plane and carry it with the rest of my equipment by myself (no roadies this time!) In addition, it would be great if it broke down somehow to fit better into my cases, but that is less of a concern. The sound quality is the most important thing and if anyone can suggest something I can call ahead and make my promoters request the venues get for me, even better!

Thanks in advance!

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Subject: Re: Portable Metal Resonator for Musical Instrument

Posted by [Wayne Parham](#) on Thu, 04 Aug 2011 21:32:31 GMT

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I think I get what you're going for. Sometimes, working with sheet metal, you'll get a piece that is fun to shake and get those "wocky-wocky" sounds from. Or twist it back and forth to get a sort of slide guitar sound.

Seems to me the thing that sets the sound is the thickness and material, and then of course, it's length. That sets the main body of the sound, it's natural resonant frequency. The bends modify the stiffness somewhat, making its frequency shift.

As for acoustic filters - a chamber you might put in front of the vibrating sheet - there are a lot of things you can do, if you want to modify the sound. A Helmholtz resonator will tend to have an impact at one frequency only, whereas a pipe will have multiple resonances. A flared pipe will sound different too.

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Subject: Re: Portable Metal Resonator for Musical Instrument

Posted by [Ebirah01](#) on Thu, 04 Aug 2011 21:54:47 GMT

Hey there Wayne!

Yeah. I used a nice bit of sheet metal to get that "thunder/wobbly" sound currently, but it is too thick to work well as a resonator. I guess I need to get out there and track down a thinner piece and try that. My concern is it may be too flimsy. I did track down a "plan" for building a metal cello designed by Bart Hopkin (Experimental Music Instrument Quarterly editor), but it is not very precise and does not give much information on the thickness or bending of the resonator sheet.

Anyway, excellent thoughts Wayne! Cheers! I'll do more research and post when I have a nice new crazy instrument thingy to use for the upcoming gigs! Thank you!

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Subject: Re: Portable Metal Resonator for Musical Instrument

Posted by [Goatmaster](#) on Mon, 08 Aug 2011 14:31:58 GMT

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Have you tried attaching a metal canister of some sort with steel wires to the string you will be playing, like a barimbau (sp?)? That could work, and then you would just have to attach the playing string to your cymbal stand and then attach the resonator and you're ready to go. Maybe even amplify it with a contact pick up?

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Subject: Re: Portable Metal Resonator for Musical Instrument

Posted by [LizardBat](#) on Sat, 13 Aug 2011 19:14:09 GMT

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What about something more like a metal cone, sort of like what they used on those old violins? You could attach one of those to the side of your cymbals stand and then attach the string you bow through it and change the pitch with a slide or something like that.

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