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## Subject: Journal of a First-time Builder - Pt 4: Functioning Speakers x2!

Posted by [GarMan](#) on Wed, 19 Nov 2003 14:36:59 GMT

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The weather over the weekend was good and I was able to complete the first speaker to be fully functional. The first thing I did on Saturday was take the fiberglass insulation back. My wife gets itchy just looking at it and certainly does not want the stuff in a semi-opened cabinet in the living room. So I dropped by Audio Hardware Inc, a local shop in Toronto, and got a sheet of acoustic "egg-crate" foam for \$30 (Cdn). I didn't measure it but it was very large, approx 5x10 and ranged from 1" to 2" in thickness. We talked about speaker building for a bit and he gave a twenty bolts and T-nuts for free. Sez it's the best way to install woofers. He also recommended I get some adhesive-backed foam weather stripping from Home Depot for use as gasket for the woofer. Photos of the foam and T-nuts are posted in the link below. The acoustic foam was very easy to work with. Measure and cut to size. Holds it shape extremely well so holes and slots can be cut directly from the sheet to go around bracing. Also, no need to wear a mask and glove to handle it. The front of the cabinet (up to the woofer), one side and bottom was lined with this stuff.

Cut a 4 3/4" port through the 1" back baffle, woofer installed with the t-nuts, tweeter with wood screws, back panel clamped on, and there you have it, functioning speaker. How did it sound? I didn't want to make any comments until I could listen to them as a pair. As a first time builder, it took me two and a half weekends to complete one functional speaker. I had to figure out a lot of things on my own along the way. I also went a little overboard on the build, using 1" MFD, dowel joints, and extra bracing. I was interested in seeing what experience will bring to the second cabinet. Sunday morning, I went back to the Building Box to get another sheet of 1" MFD cut for the second Tower. Give them a cutting plan and the first five cuts are free, \$1 for each additional cut. If you don't have a table saw, this is the service to use. What have the past two and a half weekends taught me? How to build a functioning 2Pi Tower speaker in four and a half hours.

That's right. Over 20 hours for the first speaker, and only 4 1/2 for the second one. And no cutting corners. Talk about learning curve. In fact, I think the second cabinet is even better built than the first, with only one edge that not completely flushed. LISTENING IMPRESSIONS With two functioning speakers in place, how did it sound? Before I go on, I'd like to put some disclaimers in place:- The speakers were not built "exactly" to Wayne's plans. 1" MFD instead of 5/8", although internal dimensions were kept to spec by increasing external dimensions. Port size was increased to 4 3/4" due to the 1" baffle and additional bracing was added. "Egg-crate" foam was used instead of R13 fiberglass, and the bottom was lined instead of the top.- Listening impressions are based on using the speakers on my system. CDP is an old Sony unit. There are certainly flaws with it, but I've never found it "objectionable" in its music presentation. Integrated amp is an ASL 1001, using 4 KT88 in push-pull, with outputs of 25W in triode mode and 50W in ultralinear. I always keep the amp in triode mode.- My living/dining room is open concept and measures over 20'x15', with ceiling height over 12'. - The drivers are still relatively new with only 10 hours on them.- The back panels are not sealed. However, all edges and joints have been planed and sand to fit flushed and the panel is clamped very tightly in place. So on with my impressions: You are going to have to invest in a very expensive subwoofer to improve the bass on these speakers. WOW! Bass is not just about the thump-da-thump in dance music. In fact, I think deep bass is more important for jazz and classical than dance. These speakers give the upright bass the presence it deserves in jazz trios and percussions jump out in classical. Dynamics is excellent. The efficiency of these speakers gives music a presence that you only find in live performances. Live recordings like Diane Krall in Paris, Jazz at the Pawn Shop, Nirvana Unplugged, Clapton Unplugged are especially good with the Pi towers. The speakers are so

effortless in delivering volume that it's easy to get it up there without realizing it. Imaging and soundstage are quite good. I've read from some owners that this not an area where the Towers excel, but in my living room, it does a pretty good job. Image is not pinpoint, but it makes up for it with a very wide soundstage. Soundstage is not football field deep, but enough to make music interesting. The midrange is okay, but I wish it could be better. To me, it sounds too clean, almost sterile. It's lacking a level of richness that's needed for truly accurate presentation, and is most noticeable in vocals. I have not decided on whether this is an issue with the midrange, or the lack of midbass, but it is a little too lean for my taste. (WARNING: Negative comments about Pi Speaker in Pi forum) If there is one weakness about these speakers to complain about, I would say it's the highs. The speakers are too bright. I had this impression when I did my quick-n-dirty listening session last week but ignored it because the cabinet was not full completed. But with the port and insulation in place, the speakers are still too hot, especially with vocals. This weakness is more noticeable in some recordings than others. Recordings with vocal that sound good but too bright include: Mel Torme, Diana Krall, Clash, Tony Bennet, some Green Day, and the Unplugged recordings. Recordings with vocal that I find objectionable with these speakers include: Oasis, some Green Day, Collective Soul, and Kylie. You see the pattern, don't you? The speakers don't like recordings with synthesized or processed vocals. Sure, you can argue that the recordings are crap to begin with and the speakers are only revealing what's on the CD. But these recordings have never been objectionable to me in other systems (some being very high end). My CDP is far from perfect, but have never presented these recordings in this manner. FINAL THOUGHTS Someone once said that there's about a dozen things that a speaker needs to do well to become the ideal speaker, and that even if you spend a million dollars, you'll still not fulfill everything on the list. To my ears, the Pi Towers do a couple of things extremely well (bass and dynamics) and is very competent in other areas such as imaging and soundstaging. The upperbass and midrange is acceptable, although there is room to improve, while the highs are definitely its weakest link. Price-to-performance is always a factor, and considering the kits only cost \$120 USD, you do get a lot for the money. I haven't tallied up the costs of material, but it should come in between \$150 to \$175 CDN, veneer included. For \$250 USD total and a weekend's worth of time (for an experienced builder), it's still a bargain. But I'm not sure I'm willing to be happy with a set of speakers that has its flaws but is a great value for the money. If I had purchased the speakers, it would be another matter. But after spending my own time and effort in building these, it's very difficult to accept anything less than excellence. Besides, these speakers demand quite a bit of real estate in my house, so it's got to perform extremely well to deserve the space. I know Wayne has never endorsed tweaking the Tower or the KSN1038 tweeter. But I need to find a way of cooling it down. After going this far, I would even consider paying the extra money and going to a PDS2002 with cross-over. I'll keep y'all up to date on my tweaking. More to come.....

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