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Subject: Re: Am I in the Right Place?

Posted by [Wayne Parham](#) on Thu, 06 Apr 2023 23:33:08 GMT

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Going a little larger - to 5ft3 - adds a smidge more bass and remains properly damped. You can model it and see what I mean, or build a physical model and measure it. Going smaller reduces bass output, but again, remains properly damped. So that's a useful alignment where space is a premium and/or where subs will be used.

Another couple of things that are play in a large two-way design are internal standing waves and baffle-step. Large cabinets - those larger than a couple cubic feet - tend to develop standing waves in the lower midrange. That's one of the things that can make a large two-way design difficult 'cause the midwoofer is used in the midrange. You don't want standing waves to give it an unnatural boxy, throaty sound. So it is best to watch out for them, and to mitigate them in the design.

And baffle step is always a concern, no matter what size the cabinet is, but in larger cabinets it tends to happen right around the Schroeder frequency of the room. So the radiation pattern shifts from forward to omnidirectional (with the attendant on-axis rolloff) right around the same frequency that the sound field shifts from statistical to modal. Said another way, the speaker loses on-axis SPL right at the edge of the modal frequency, so we really don't want to "pump it up" with (passive or active) equalization. There are better ways to deal with that.

The 2226H is great to 40Hz but not below, so subs are useful for extension below that point. They can also be used for mitigating room modes, SBIR and even for baffle step compensation if setup to do so. Do a search here (or on the rest of the internet) for "flanking subs" and for "multisubs" to get more information about that.

If you have no measurement equipment, you might just want to copy the four Pi cabinet and delete the tweeter. Flip it upside-down with the woofer closest to the top edge of the cabinet and make a cradle to mount your tweeter horn above that. That way you'll not have to worry about tuning, alignments or internal standing waves.

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