Subject: Re: Size of the speakers
Posted by Wayne Parham on Sat, 28 Oct 2017 15:38:14 GMT
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The size of the speaker matters with respect to efficiency and/or bass extension. When designing a speaker, you can choose to optimize any two of three variables: 1 - Small size, 2 - Bass extension and 3 - Efficiency. This is called "Hoffman's Iron Law."

Want small size and deep bass extension? No problem but you must sacrifice efficiency. If you want high efficiency and deep bass extension, then you'll need a big box. Need high efficiency from a small speaker? You better use subs because you can't make it go too low. These relationships are quantified in the Thiele and Small formulae that describe loudspeaker parameters.

Size also has an effect on directivity, meaning the projection of the sound in a particular direction. A small speaker tends to radiate omnidirectionally where a larger speaker will project the sound forward. The larger the speaker, the lower the frequency where omnidirectionality will set in.