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Subject: W verses equiangular spiral

Posted by [Bill Fitzmaurice](#) on Fri, 14 Jan 2005 17:17:32 GMT

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I use what works best for the intended application. The W has the properties of smaller cross-sections and a single bend, which if configured with concentric rounded pathways can allow passage of mid and even high frequency waves relatively intact. But it also has a shorter path length capability from a finite space than a spiral. These properties make the W well suited for midbass and wide bandwidth applications, not so great for low bass applications, and that's why I use it in my wideband designs. A spiral is far more difficult to construct with concentric round bends, so it's not a good candidate for wideband use, though as Western Electric proved 70 odd years ago it can be done. But as a spiral allows the longest possible pathway from a finite box size, and complicated reflectors and rounded bends matter not below 200 Hz or so, it makes sense to go spiral for pure basshorns. The KHorn seems to make the case for the W configuration for a basshorn for corner placement, but I've found that even there a spiral horn has the advantage, as the spiral configuration will allow a far smaller box for equal or better result.

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