Subject: CD horns
Posted by Wayne Parham on Fri, 09 Feb 2007 07:11:18 GMT
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One thing that can really help you with the size problem is boundary loading, especially corner loading. Of course, that only works indoors, mostly a home hifi thing. But if you have room corners, use them. They're built-in 90° flares, and they're large.Room corner characteristicsAs for the wider angle near the mouth of a CD horn, that's done to try and maintain constant directivity as a horn begins to transition to a diffraction slot at the low frequency end of its range, just before it loses pattern control. Looking back at the patterns made by single-slit diffraction, notice the ripple in energy distribution out to the sides of the main pattern. As frequency drops, just before a horn loses pattern control and the pattern widens up, it becomes slightly narrower through a band of frequencies. Spacing down the horn from the throat, if you widen the flare at that point, it will tend to widen the pattern through that transition region. The idea is to widen it up just enough to match the wall angle from the throat forward to the transition point.