Subject: Re: Efficiency of backhorns
Posted by DMoore on Wed, 16 Apr 2008 02:30:43 GMT
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Derived from Plach:Back-loading generally is not as efficient as a front-loaded horn, all things being equal.The gain of back-loading is that the horn's frequency response bandwidth is increased over a comparable front-loaded horn.Rear-loading a horn generally requires a driver with a higher Fs than the horn's Fc, and a "rising response curve" for the driver in question.A front-loaded horn is best utilized with a LOWER Fs driver than the horn's Fc of relatively linear (flat) response. However, if I remember correctly, Bruce Edgar advocates a driver of a higher Fs (than Fc) and lower Qt for a front-loaded application. So there is plenty of arguments both ways.One note of precaution, though: a rear-loaded horn often requires that the high(er) frequencies be limited by some method (i.e., a tortuous horn pathway, or an acoustic filter of some sort) to prevent them from going through the horn, which will result in comb-filter distortion when the same frequencies are being produced by the front of the cone at the same time. Having an indirect (i.e., downward or rear-firing, etc.) horn mouth may eleviate this effect somewhat.DM