Subject: Re: fs with horn flare... Bill Fitzmaurice???
Posted by Bill Fitzmaurice on Tue, 03 Aug 2004 15:33:57 GMT
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Yes, the Fs drops, but there are a number of factors involved. The flare rate, throat size, mouth size and path length all have an effect, and depending on the permutations can drop the Fs by a few Hz or by more than 50%. Also the fact of just restricting the baffle opening lowers Fs, as this creates a resonant chamber in the area between the cone and baffle. This is what happens in so called 'slot loading', which TOA used to use extensively. In reality what you get is a dual chamber box. With shorter horns this chamber has more effect on lowering Fs than the horn does. Ideally a 100 Hz horn in free space would have a mouth with the minimum distance across (diameter for a round mouth) of about 11.3 feet. This would not only ensure maximum loading but would also have the horn operating into half-space instead of free-space, which in itself is worth 6dB on axis. Obviously this ideal is seldom realized.You can add a horn to an existing cabinet, but when you do so the box Fb drops. This may or may not be a good thing, depending on all the other variables involved. If it's a reflex box the tuning would have to be redone to account for the lowered Fs.