Subject: Tractrix Horn Loading
Posted by Adrian Mack on Mon, 07 Jul 2003 00:38:05 GMT
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Hi everyone,So many people say tractrix horns dont load properly down to their flare frequency, and that they only start properly from about an octave above the horns flare frequency. I've done some modeling in Hornresp, and found this statement to be not always the case. I've had some times where indeed it showed on the SPL curve that it doesn't go flat down to its flare frequnecy at all. But I've also found some tractrix horns that DO load right down to their flare frequency, according to hornresp. The Eminence Alpha 6 in a tractrix horn with flare freq of 242Hz, 26cm^2 throat and 1600cm^2 mouth (40cm long horn) does show it flat all the way down to 242Hz, which is its flare frequnecy. So would it be able to be used down to its flare frequnecy because its flat all the way down to that? Or should I still follow the "rule" about tractrix horns not loading down to their flare frequency?Thanks!Adrian

Subject: Re: Tractrix Horn Loading
Posted by Bill Martinelli on Mon, 07 Jul 2003 00:52:53 GMT
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You might find that even if the tractrix horn loads the driver down to cutoff that the throat distortion will increase at near cutoff frequencies. If this happens you will be unhappy. Every style horn will work better with different drivers but you wont know for sure until you build it and test it. Bill

Subject: Peaking in the bottom octave
Posted by Wayne Parham on Mon, 07 Jul 2003 01:21:23 GMT
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You undoubtedly have some peaking in the horn design you are talking about that has increased output near the cutoff frequency. I often build conical horns with this same sort of response, so I'm not against this practice. But the fact is that the acoustic loading of tractrix and conical horns becomes less resistive at the flare frequency than it is further up, and this translates to lowered efficiency. A bump in the bottom octave from resonant peaking can be used to raise output instead.