Subject: Re: Horn throat size
Posted by Bill Fitzmaurice on Sat, 21 Aug 2004 13:02:05 GMT
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There are some things that McBean can't tell you. Foremost is throat distortion and power compression, which is a product of throat size/compression ratio, horn impedance, driver excursion(as a function of frequency x power input) and driver Bl product. McBean predicts linear response irrespective of power input; in reality that is not the case. The other factor McBean doesn't accurately predict is HF response. Best case it's off by at least an octave; worst case a lot more than that. While it does predict (inaccurately but within reason)the increased HF loading achieved by a smaller throat size it doesn't predict the phase cancellation resulting from pathway differentials from the various segments of the driver cone to the throat as the throat is made smaller, nor can it predict the effects of a phase plug intended to alleviate this problem. The bottom line is that while horn programs are very useful they are also incomplete, and the art of horn design remains at least 50% empirical.