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Subject: Re: Basshorns - Pros and Cons

Posted by [Wayne Parham](#) on Thu, 31 Aug 2006 00:05:26 GMT

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Our ears are most sensitive to the upper midrange, as is shown by the Fletcher-Munson curve. This is also called an "equal loudness" curve, in that it graphically illustrates what frequency/energy levels sound equally loud. Any spot on a given frequency curve should sound equally loud as a 1000 Hz tone of a given SPL. The thing is, distortion at bass frequencies manifests itself as harmonic components in the midbass and midrange. That's why bass distortion is so noticeable. Look at the Fletcher-Munson curve above and you'll see that it falls rapidly below 100Hz, indicating that our ears become more sensitive to sounds as frequency rises from the deepest bass range. Harmonics above about 100Hz are troublesome, and these are generated as second-harmonic distortion from fundamentals above 50Hz and/or third-harmonic distortion from 33Hz signals and above. So you can see that bass systems aren't exempt from the requirement that low distortion be needed for good quality sound.

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