Subject: Wayne's Speaker World
Posted by Zene Gillette on Mon, 11 Sep 2006 21:31:18 GMT
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Wayne ... you posted a Fletcher-Munson curve in Hi-Eff forum last month.I don't understand it (and most things on this earth).If our ears follow this general curve at an early age, then why are speakers designed ruler flat if possible? Shouldn't they be a mirror image of the curve. And does that mean live music is contoured by the nature of the instruments and each ones power output? As we get older (me) the higher frequency hearing gets lower and lower. Shouldn't we compensate for that also when building speakers if we are the only listener? Zene

Subject: Fletcher-Munson Curves
Posted by Wayne Parham on Mon, 11 Sep 2006 21:52:57 GMT
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If you listen to two tones, they'll sound like they're played at the same volume if they're on a Fletcher-Munson curve. So as you can see, a deep bass sound needs to be much louder than an upper-midrange sound to give the perception of being equally loud. But regardless of this fact, if you want to try and reproduce sounds faithfully, they should be as close to the original as possible.Fletcher-Munson Equal Loudness Curves

Subject: Re: Fletcher-Munson Curves
Posted by Zene Gillette on Mon, 11 Sep 2006 22:25:09 GMT
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Gotcha ... So young ears are "flat" so to speak to music, but what about diminished hearing? That starts around 30 years old. Shouldn't we shelve and boost the hell out of the upper frequencies? I have a hearing screening test next week. Both the examiner and hearing aid rep (both audiophiles) will be there to help with my stereo related concerns. From conversations they both realize I am looking to do active compensation. Zene

Subject: Re: Fletcher-Munson Curves
Posted by Wayne Parham on Mon, 11 Sep 2006 23:19:34 GMT
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You're right about hearing loss from age or exposure to loud sounds. It tends to remove high frequency sensitivity first, so I suppose another set of curves could be drawn to illustrate that.

Subject: Re: Fletcher-Munson Curves
Posted by Zene Gillette on Tue, 12 Sep 2006 00:06:33 GMT
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Sorry to not make my point clear, clearer, more clear (pick one). Is there anything inherently wrong with PEQ'ing a system to match hearing loss? Phase shifts come to mind, but is that a fair trade? I think so. As you can tell, I'm not taking this avenue lightly. Almost everyone with a stereo system is in the same boat if I am right. I'm sure most are over 30 and all have some dimished hearing. And those that do a frequency sweep and testify that he can hear to only 15K says nothing about the losses below that frequency. It will be on a decreasing slope. I heard someone on a forum say he can detect less than 1dB change in his system, yet his hearing could be 5dB or more down. Same guy might try to get his system flat to +- 1.5dB. Who is he or manufacturers making the speaker for, a 20 year old? Makes no sense. Zene

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Subject: Re: Fletcher-Munson Curves
Posted by Wayne Parham on Tue, 12 Sep 2006 01:14:09 GMT
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Well, sure. You can EQ for hearing loss or even just for personal preference.I think some hearing-aids for people who are severely hearing impaired probably EQ upper mids for intelligibility because there is a lot of information in the upper mids (like distinguishing a "D" sound fom a "T" sound).However, most people I know tend to like a more laid back treble as they age. Sizzly treble is popular with teenage boys that have the best hearing, and later, they'll want the warm sound of a tube amp with relaxed top end. That same sizzle seems to irritate the old-timers.

Subject: Re: Fletcher-Munson Curves
Posted by GarMan on Tue, 12 Sep 2006 15:37:47 GMT
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Whether to EQ or not depends on what type of listening experience you're trying to reproduce with your speakers.If you're trying to reproduce music as you would hear it NOW, there's no need to EQ. Loss of hearing in higher frequencies applies to the real world the same way it does to speaker systems. So if you're speakers are flat, music will sound the same as you would experience it in the real world.If you're trying to reproduce music as you would have heard it 20 years ago, then EQ would be required.

Subject: Re: Fletcher-Munson Curves
Posted by mollecon on Mon, 18 Sep 2006 18:10:28 GMT

Garman pretty much nailed it, I think. Not to discourage you, but care should be taken when EQ'ing for loss of hearing is used. If one overdo it, the result might end up being more loss of hearing - be careful!