Subject: Re: Upgrades
Posted by Wayne Parham on Wed, 10 Aug 2011 19:52:51 GMT
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The higher-end compression driver is smoother and the upgraded midwoofer is both smoother and lower distortion. This is largely because of the use of shorting rings in the magnet structure. Magnet structuresThe reduced distortion is measureable, but don't take this to mean there is a huge difference. It's a subtle diference, but it is audible.

One of the effects of distortion is listener fatigue. It becomes irritating, and even causes temporary tinnitus. It seems to be a function of SPL/time, in that high sound levels cause irritation fairly soon, but the same irritation can be felt at low sound levels if experienced over a longer period of time. These are my own personal observations but I have also heard comments from many other people that make me believe they experience the same things.

This is what I perceive where distortion is concerned:
1. In main speakers, lower distortion speakers tend to sound clearer to me, all other things being equal. However, the audibility is a function of SPL, and below a certain level, I cannot detect the distortion.
2. At high power level, a speaker with a little more distortion will be more fatiguing, making me want to "turn it down" much sooner than a less distorted speaker.
3. At low power levels, a speaker with a little more distortion will be more fatiguing over a long period of time. At low power levels, I cannot tell that it is going to fatigue me at first, even for a few hours, but after a few days at a trade show, for example, the higher distortion speaker will fatigue me, where the lower distortion speaker does not.
4. In subwoofers, distortion is much less noticeable, but higher distortion tends to sound louder and fatter. (Sorry for the subjective terms, just trying to describe what I hear)
5. Just like the mains, a high distortion woofer will be fatiguing, even if it cannot be easily detected.I gained these opinions after many years of using my own speakers which often come in a stock or upgraded version. The upgraded version usually has a midwoofer with a shorting ring, creating less distortion. Their response curves are very similar between the stock and upgraded versions, but the upgraded model has lower distortion.

As for crossover upgrades, my feeling is that the coil upgrade is worthwhile, followed by the resistor upgrade and finally the caps. Even if you don't call your parts, you're going to get good stuff. We only use Solen, Jantzen, Dayon or Erse polypropylene capacitors, Jantzen air-core coils and non-inductive resistors. Some models are offered with upgrade options where you can call parts, choosing Auricaps for example. Some are offered with larger guage coils as an upgrade option too.

If you upgrade to larger coils, you get a little tighter bass but slightly less depth. Think of the difference in bass sound between using SET and push-pull amps. Increasing DCR reduces damping factor, and that has an effect similar to increasing woofer Qes and ultimately Qts. So the stock 18 guage coil sounds a little fuller down low, whereas a larger guage coil sounds a little tighter.

I've substituted a lot of caps, and the differences are a little more subjective. It isn't a simple

matter of DCR and damping factors, like the coil swap is. I've used everything from Solen, Jantzen, Dayon and Erse (which all sound very nice to me) to oil filled motor runs to Auricaps and even Audio Notes.

Solens, Daytons and Erse poly caps all sound the same to me. They're great, maybe sound quality doesn't get any better than that. But of course when you spend fifty bucks on a cap, you're

and I think they sound more pure with Auricaps. Do they really? I don't know. But they do sound nice. They have the same character, at least to me, but maybe a little more silky sounding smoothness. Nah, probably just the added cost making me think so.

Audio Note caps disappoint me. I hate to say that 'cause I consider those folks over there to be friends. I love their amps. But they just don't have the capacitors down, in my opinion. After a while they leak, and a megabuck cap shouldn't do that. I prefer other high end caps.

There are other brands I've tried, Mundorfs, Kimbers, even non-polarized Black Gates just to see. I don't recommend non-polarized electrolytics, even Black Gates. Might be just because I still remember the unnatural plastic sound of older NP 'lytics, but I don't trust 'em, even from Rubycon. Kimbers are fine, seem to be a little bit more etched. More HF, too much maybe. Mundorfs are good.

Now then, understand this. Everything I've just told you about caps is very subjective. Measurements of systems with most of these components don't show anything to tell me one was better than the other, and the sound differences are all too slight (if even there) to qualify as demonstrative one way or the other. Could be all psychology. I am fairly certain I can't detect differences in a blind test, with reasonable exceptions. For example, I am sure I can hear a difference between a motor run capacitor, a poly cap and a cheap electrolytic. But I am reasonably sure I could not tell the difference between a Jantzen, Solen, Erse or Dayton poly cap in a blind test. I probably couldn't tell the difference between any of those and an Auricap blind either. I could tell the Audio Note cap though, because it would not make a sound but would leave its ooze all over the table.