

CORRECTIONS

I have just noticed a (pretty inconsequential) error in my article ("A Dynamic Microphone Soundcard Amplifier," Feb. '08, p. 22): In the section "Effects of Nonlinearities," item 2 (third paragraph in section):

"A DC offset proportional to the signal level" should read "A DC offset proportional to the square of the signal level."

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There is a small error in eq. 10, p. 10, of my horn theory article ("Horn Theory: An Introduction, Part 1," *aX* 3/08). The square root sign should include the -1 at the end.

Also, the figures that do not have any reference have been drawn or redrawn by me. Bruce Edgar commented that they appeared to be taken from books (Olson, Beranek, etc.) without acknowledgement, but this is not the case.

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MORE ON WALL WARTS

Thanks to Mark Rumreich for mentioning what I forgot—the usefulness of placing transformers outside the box where the audio lives, and for clarifying the voltage doubler question ("Xpress Mail," March '08, p. 49).

Keith Levkoff's suggestion that wall warts have a habit of multiplying is certainly true. I find that the easiest way to pack them efficiently is to use a power strip with the prongs on one side and the round holes on the other, rather than one with the connections centered symmetrically. That way, the wall warts sit at right angles to the strip, and you can fit in many more of them.

If a cathode follower has its cathode sitting at +160V, it's not necessary to float the filament that high. All tube specifications include a maximum heater-to-cathode voltage, often 90V. Floating the filament supply up to +75V (on the ground terminal) would work fine. Most wire is rated to take that.

The efficiency of wall warts, of course, will vary from unit to unit; but the way to keep them from drawing power when the equipment is not in use is to switch off the power strip. Can't get much greener than that.

Finally, thanks to Keith for pointing out the ventilation issue. I don't advocate putting *any* electronic equipment under "carpets or stray clutter," except maybe non-power wires. Wall warts, like everything else electronic, need to stay cool.

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RECORDING

I note that "A Matter of Coincidence" is still ongoing, and that it has the benefit of a review by Gary Galo (Jan. '05, p. 44).

I believe the comment on the Opus 1 No. 3 is a little inappropriate though, as the entire trio was done in one day, and neither the mikes nor the musicians were moved. Hmmm! As I recall, the LP of

the two trios was record of the month, too, in one of the national magazines of the time.

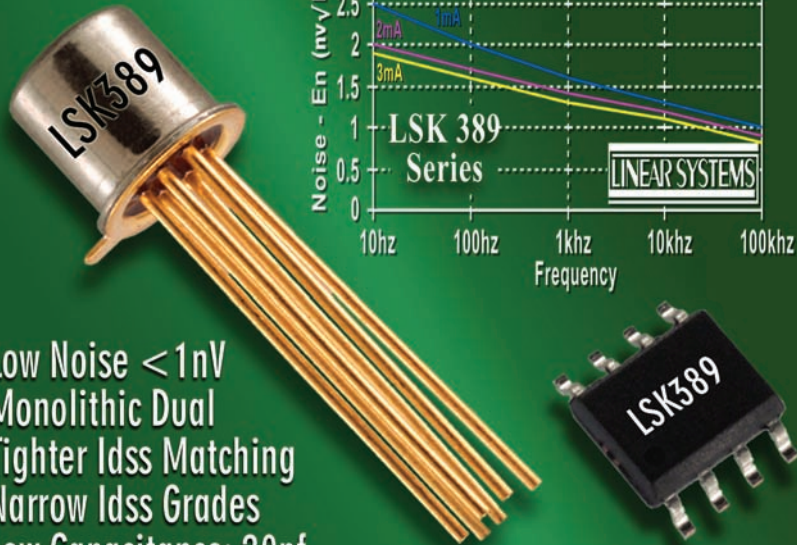
The recording was done in the Bishops-gate Hall, London, and the piano was the one regularly used by Myra Hess in her day. With the benefit of hindsight, you always think that this or that could be better, but perhaps that is just the evidence of evolution.

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AUDIBILITY OF CABLES

I'm writing in response to Peter M. Moritz's letter, "Cable Tests" (*aX* 12/07, p. 46), which was in response to my letter, "Hearing and Blind Testing" (*aX* 10/07), which made reference to his letter "Cables" (*aX* 07/07). Got that? In my letter, I used his strong words regarding the inaudibility of cables to illustrate a point,

1nV Low Noise Dual JFET



The image shows a cylindrical LSK389 Dual JFET component with four gold wire leads. To its right is a graph of Noise - En (nV/√Hz) versus Frequency (Hz) on a log scale from 10Hz to 100kHz. Three curves are shown for bias currents of 1mA (blue), 2mA (red), and 3mA (yellow). All curves show a decrease in noise as frequency increases. The 1mA curve is the highest, followed by 2mA, then 3mA. The graph is labeled 'LSK 389 Series' and 'LINEAR SYSTEMS'.

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perhaps unfairly.

Peter, I sincerely apologize for this. I do appreciate the cable blind testing links you provided in your reply and have read several, so far. The point I was trying to make is that beliefs play a vital and powerful role in how we hear sounds.

Cable blind tests, which change only

the given information about which cable is hooked up, just prove that the mind is very open to suggestion. This is true. A person can hear the exact same sound under different circumstances and have an entirely different reaction to it. It's a conditioned response and a function of a person's beliefs, emotional attachment,

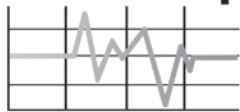
likes, dislikes, and so on. And, it's all part of our sensory system.

The Jastreboff model for hearing explains this mechanism (www.tinnitus.org). Classical models for hearing are too simple and don't fully explain how we hear sounds. I had to learn the model in order to treat my tinnitus (ringing ears), hyperacusis (hyper-sensitivity to certain sounds), and phonophobia. I am starting work on an article that explains the Jastreboff model and how I think it relates to my audiophile hobby. However, I really don't expect it will end the debate on the audibility of cables—just want to throw some ideas out here.

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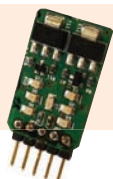
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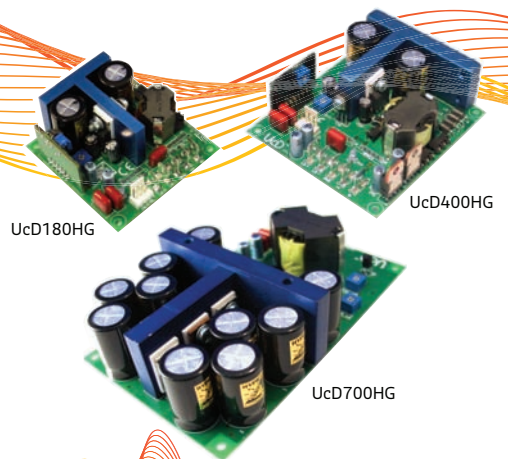
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in a specific way—possibly amplitude), you can measure how well this goal is achieved. The only place for opinion here is that you may personally find that one specific difference is more audible to you than another; you may be more “sensitive” to a non-flat frequency response, while someone else may be more annoyed by THD.

It can be stated, however, that the definition of “high fidelity” is the removal, or at least the reduction, of these differences from the ideal. The dictionary definition of “high fidelity” is along the lines of “accurate to the original.” You may even prefer more of a certain type of distortion, but that is *not* “high fidelity.” With mechanical devices such as speakers the differences become more pronounced, the approaches to perfect less close, and personal sensitivities more widely variable.

Second, human beings are very much influenced by perceptions.
—We tend to hear what we expect to hear.
—We tend to “become attached to” certain equipment—and choices. Most of us are quite sure that the speakers *we* built

sound awfully good. Most of us would also prefer not to admit, even to ourselves, that the expensive equipment we liked in the shop—and cannot return—sounds a bit less impressive at home. Many of these reactions are unconscious—they are built into the human brain and cannot be entirely removed, even with conscious effort—which is why blind testing is so important.

As for tweaks, some actually work (in the factual realm), but many only “work” in the mind of the tweeker. You may be quite sure that your system sounds better with African Wacca-Wacca wood blocks under the speakers, but it would be useful to know whether you’re imagining it before you mortgage the house to buy several sets. Reason suggests that you should not be too proud to try the test with your eyes shut and a friend switching blocks.

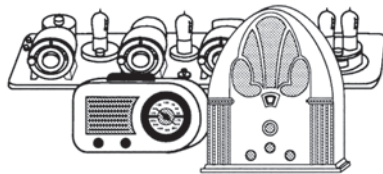
Personally, I find that music sounds more engaging on bright sunny days, and certain artwork and decor definitely enhance certain moods, which, in turn, make certain music seem more pleasant. This is human nature and is not something of which to be ashamed. I just pre-

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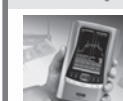
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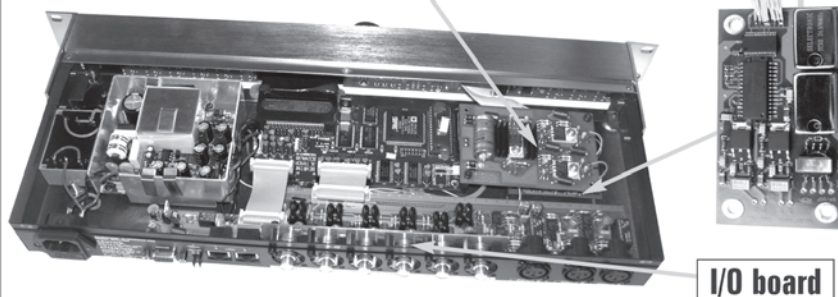


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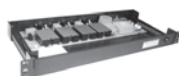
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CUSTOM WORK

fer to know whether I am buying those wood blocks because they have some technical effect, or because I simply find them attractive and they make me happy (especially if they're \$500 apiece).

Currently, in the high-end world, there is a tendency to deliberately attempt to blur the lines—you can probably guess that the marketing folks are to blame. If they make a technical argument about how those wood blocks actually do make a difference, and if that argument makes sense to you, odds are that you will hear a difference—whether one factually exists or not. It's simply that your mind hears what it expects to hear. This is why they *tell* you that you'll feel cool driving their sports car—because it actually does influence your perception.

This is also why you will see very few advertisements for tweaks that say simply, "go and listen, then buy them if you like them." The technical arguments serve to set your expectations, which then influence what you hear. This is why you owe it to yourself to do the occasional double-blind test before buying.

Another issue is the "different versus better" question. Many things—interconnects, for example—can make a very tiny but perceptible difference. The problem is our human tendency to assume that every difference must be an improvement—it sounds novel and interesting and it's human nature to consider that it is probably better.

If you try those new interconnects, which make everything sound "clearer and crisper" than it did before, are they really better? Could it be that they are slightly lower in capacitance, so all they are doing is raising the treble a fraction of a dB? If so, not only might they actually not be an improvement, but you might not even notice the change in a few hours after your ears "break in" to the new status-quo.

Again, I might still decide to buy the interconnects if I really prefer the change—but I would want to know whether they are really some wonderful new technological breakthrough or the world's most expensive tone control. Of course, their marketing department and the sales guy at your local high-end shop, who is hoping for a commission on the \$5k, will do everything they can to convince you that the change is real and

useful.

"Tweaking" as a hobby (as someone described it) has produced a reality where people buy a preamp that's a bit bright, then some wires that are a bit dull to cancel that out, then a new cartridge to "liven up" the midrange. It goes on and on, when it would be much more efficient (and cheaper) to find some equipment that is more or less correct than to persist in seeking tweaks and matches between equipment that cover the flaws of the individual pieces. Back when "tweaking" generally meant buying a cheap piece of equipment, then making economical mods to improve it, this made sense—but now some of us buy expensive equipment, then make expensive mods to try and improve it, which isn't nearly so sensible.

What I find most offensive personally, however, is when the "scientific" explanations for various tweak products are pure and complete nonsense. The current tendency is to offer a scholarly discussion, with a liberal sprinkling of current buzzwords such as "quantum," which sound impressive but often are quite

meaningless—if not downright wrong. In some cases, for all I know, the tweak may actually do something audible—but the explanation as provided in the marketing literature is nonsensical to the point of being quite comical.

Colored rocks, especially if sealed in a glass jar, are *not* going to absorb "bad vibrations" from out of the air, and nothing is going to influence the laser in your CD player so that it modifies the plastic in your CDs to reduce the error rate. Yet people, right now, are paying hundreds of dollars for these nonsensical products. (I assume that, because they expect to hear a difference, they actually do—otherwise, they would be very mad.)

I find it offensive that companies resort to these tactics, sad that people fall for them, and truly unfortunate that the magazines who should be debunking them take ads from these vendors instead (and are then unwilling to do anything to offend them).

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