Subject: Updated the crossovers on my K-orns to spec
Posted by akhilesh on Mon, 02 Jan 2006 04:37:12 GMT
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Hi Everyone,I sent my 1978 k-horn AA xovers to Bob Crites, of Arkansas, to upgrade to original spec. bob uses GE polyprop in oil caps, and checks the chokes, etc, to make sure the xover is running to original spec. Well i expected some difference, since they say the original oil caps go bad after 20 years, and mine were 27 years old. The difference was actually quite significant. whereas earlier the k-horns sounded a boit muddled and not very coherent, they now sound really good. THe music seems more coherent, the highs seem a lot better. I really enjoyned listening to thm tonight, driven by a 2a3 SET. TO all who own older -horns, if you havenlt updated the xover, it makes a LARGE difference. -akhilesh

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by hurdy_gurdyman on Mon, 02 Jan 2006 14:22:31 GMT
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akhilesh,Congrats on the K-horn update. I've always wanted a pair of those speakers. Maybe someday...BTW, don't mention on the Klipsch Forum that you are driving them with a tube SET. You'll get roasted. Dave

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by akhilesh on Mon, 02 Jan 2006 17:09:47 GMT
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HI Dave,Yeah. I love them cos they are stock 1978's, and it's like owning a classic. (alnico magnets, etc)But after the crossover update (i wouldn;t call it an uopgrade, just an update since they are basically performing to original spec), I can actually hear what Paul klipsch heard when he passed these. BTW, I heard a rumor someplace that these were voiced with a 2a3 amp. I am using a cheaop chinese BEZ amp 2a3, with a 6j7 driver tube. The sound is very nice. I also have a dynaco st35 clone that I will switch...that;s an 18 watter BUt frankly, 3.5 watts is WAYY more than i need, cos that gives me upto about 108 db, and i only lsiten at 85-90 db in my music room. They do sound a lot cleaner after the ctrossovers were rebuilt. Bob Crites did a great job, and is reasonable. I feel lucky to have found these khorns about 4 years ago, in basically mint condition, sibngle owner. THe guy couldnot sleep, becuase he had owned them since 1978, and had listened to them for 20+ years. I assured him they would be in good hands. These are great speakers. no other word for it. Great. What an awesome and elegant design. Love em. -akhilesh

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by Manualblock on Tue, 03 Jan 2006 23:22:57 GMT
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There's an interview with Paul Klipsch in SP where he says the K's were voiced with a Brook Amp. Which begs the question whether an amp should be voiced at all? I believe all the good speakers were voiced with a specific amp but I think on this forum some may quibble with the whole concept. What do you think; AK??

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by akhilesh on Fri, 06 Jan 2006 17:06:14 GMT
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HI John,HAppy New year to you!I think if you are using tube amps, then these perform differently enough that one should specify what they were voiced. I believe most solid state amps are soundless, and hence it doesn;t really amtter what you "voice them with". The Brook was a push pull 2a3 if I remember. THe one I use is a SE 2a3 amp. I don't believe overall amps add too much of a sonic signature, as long as they are well executed. But they are fun hardware to play with! and sometimes good tube amps add pleasant distortions! I have a lot of tube amps and love them. They do somehow make the music sound more involving than solid state. probably by blunting out harshness. -akhilesh

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by Manualblock on Fri, 06 Jan 2006 18:12:28 GMT
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Happy Holidays to you AK! Blunting out the harshness...you may get a citation from the audio engineering police for that statement.

Subject: Re: Updated the crossovers on my K-orns to spec
Posted by Bob Brines on Fri, 06 Jan 2006 20:55:24 GMT
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Exactly!When I commissioned my tube amp, I had a long discussion with the designer (Jef Larson) about what I wanted to hear. We talked about SET and P-P and different colorations. I finally said that I wanted as honest an amp as he could do for the price. Jef presented me with an amp that sounds exactly like my Yamaha HT receiver, except that it is a bit softer around the

edges. The tubes also seem to image a bit deeper and blacker, but it's real hard to compare at this level.Would we like to get Earl Geddes involved in a discussion of the importance of amps in the audio chain?Bob

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Subject: Tube amps versus SOLID state
Posted by akhilesh on Sat, 07 Jan 2006 16:55:05 GMT
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Sounds good Bob! I think there are 2 schools of thought:a) A solid state amp that is well designed (read like 90% or more of them) will add no AUDIBLE signature of it's own. I agree with this. b) Tube amps do something "magical" to the music, well some of them do, and make it sound more involving. I agree with this too. They do this by adding sonic signatures of their own, best measured by increased euphonic distortion and frequency aberrations that make "voices clearer" or "instruments better separated". Often, the effect is subtle. For example, if you heard the old zen amp I had (decware zen se-84C), in my opinion it was a thinnish sounding amp, but it certainly made voices (esp. women;s voices) sound better. I have heard Wayne Parham remark that a couple of times, spontaneously, when we switched amps and changed noting else, keeping volume control approx constant. Again, in my opinion, that decware zen adds its own sonic signature. So, I agree with b) as well (note that neither a nor b are mutually exclusive). Now, we need to ask ourselves: what is my goal? If it is ti get tehcleanest possible reporduction (HI FIDELITY), then one approach is to make EACH component in the signal chain add NO sonic signature. Soi, if I did that, I would have a cd player, very small interconnects, a solid state amp, shortest possible speaker wires with minimal LCR, and then...ahh the speakers: These are hardest to control. But if I could, I'd buy the speaker with the FLATTEST anechoic freq curve, the lowest possible distortion, and then treat my room so I got all of this at my listening position. IF I did all of this, then I would get the true recording, and all my music quality would depend on the quality of the recording. The SECOND approach is: Buy imperfect components that somehow "mesh" together, often by cancelling out each other, and adding euphonic distortions, etc, and somehow make the whole sound musical. Often, they may actually make poorly recorded material sound more "natural" and also counter room issues. I believe ALL tube amp owners follow this approach (whether they admit to it or realize it or not)! It's fun. and can result in suprprising good sound, not to mention a collection of fun TUBE amps. As one of my friends said, it beats chasing women, drinking & gambling, a a clean hobby. SO it;s really a matter of choice. I hope these comments can frame a debate on this issue, though there may be NO DEBATE: some folk will espouse the first, clinical approach, described above, while others will follow the second "muddly" approach. The discord arises when both camps claim superiority in achieving high fidelity: in my opinion the first camp is better able to achieve hi fidelity, but you gotta ask yourself, how muhc fun is tat verus messing with tubes and vintage/single drivers? -akhilesh

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Subject: Re: Tube amps versus SOLID state
Posted by Manualblock on Sat, 07 Jan 2006 17:59:34 GMT
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It's been my experience that all amps do things to the sound. I wouldn't try to define what it is they do or how they do it though; seems to me there are way too many variables to form a confident analysis.Thats why most guys serious about the music tend to shy away from all this generalisation concerning sound. There just doesn't seem to be a basis for describing absolutes.Try comparing an old Threshold Stasis amp with a modern SS amp; huge difference. This topic is like quicksand.

Subject: Re: Tube amps versus SOLID state
Posted by akhilesh on Mon, 09 Jan 2006 16:37:46 GMT
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I'm serious about the music. I meant modern solid state amps. I have yet to see a scietifically valid study that shows that solid state amps do AUDIBLE things to the sound. Perhaps Earl (scientist who spends his time in this area) can comment and point us to some data?-akhilesh

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Subject: Re: Tube amps versus SOLID state
Posted by Manualblock on Mon, 09 Jan 2006 19:57:07 GMT
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Maybe in the next chapter or so? But I have to ask AK; how would you know if the amp did audible things to the sound? I think that is the question. Unless you had access to the Master Tapes and a Tape player of quality to re-play them on so you could compare the two.I think even using a live demo would not help here since the miking would change the sound.

Subject: Re: Tube amps versus SOLID state
Posted by akhilesh on Mon, 09 Jan 2006 20:44:26 GMT
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HI John,Here is a broad idea for a scientific study on evaluating audible differences.Randomly select a sample of listeners, and administer a duble blind test wherein everything is the same (the source material, the source player, the cables, the speakers, the room, the listening position, the volume, etc). THe ONLY thing that;s differnet are the 2 amps being evaluated. Ask the subjects if they can:Guess which amp is playingIf the listeners' guesses are statistically significantly higher than 50% (this would be the random guessing percentage), then there is an audible difference. Got to make sure all other conditions are held constant...so for example volume should be withn +/- .1 db for the program material, coming out of the 2 amps. This kind of test (aka an ABX test as you no doubt know) is relatively easy to implement with little resources, esp. for an amplifier

(harder for speakers where acoustically transparent screens are needed, but for amps, no problem). It is my belief, based on lack of such evidence, that at least 90% of recently designed solid STATE amps (note the emphaisis ON recent as in last 7 -8 years or so) are sonically INDISTINGUISHABLE. Otherwise, given the burning interst on such subjects on other fora such as the taco bell forum, no doubt such findins would have been broadcast from the rooftops. Again, it would be good if someone like Earl weighed in here, since he spends a lot more time thinking about these issues, and this is a profession for him, versus a hobby for me. -akhilesh

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Subject: Re: Tube amps versus SOLID state
Posted by GarMan on Mon, 09 Jan 2006 20:51:46 GMT
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Not to put words in John's mouth, but what if all SS amps affect sound in an audibe way due to the technology, but do so consistently across all designs. Each amp would be INDISTINGUISHABLE, but still impart a voice.

Subject: Re: Tube amps versus SOLID state
Posted by Manualblock on Mon, 09 Jan 2006 23:24:47 GMT
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Yes. That is one possibility. I can think of several others off the top of my head. If the SS amps were to suppress one aspect of the signal as a function of the behaviour of transistors that would become the SS refernce sound and as such would set a standard that on appearence would be more accurate for lack of any ability to distinguish this aberration.Any others?

Subject: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by akhilesh on Tue, 10 Jan 2006 17:05:44 GMT
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While the subject of sonic indistinguishability of certain components is unpopular, especially on the more idiotic special interest websites like the taco bell forum, here are some further thoughts. 1. A thought experiment: Suppose you were a subject in an experiment. You were asked to listen to a signal, that was emanated from an analog transducer (a speaker). THis signal (program material of some sort) obviously was repreented by a certain waveform. Let us call this waveform S1. S2: Now let us suppose the same signal was slightly altered, so that the 15000-20000 Hz components in the waveform were increased by 0.3 db. Do you think you could distinguish S2 from S1. Clearly, measuring instruments could, but could a human being? The answer is no. S3: NOw suppose we took S1 again and this time increased the distortion in the signal by 0.01%. Do

you think you could distinguish S3 from S1, or for that matter from S2? THe answer is NO, again. Most solid state amps available today of almost any price over say $200, differ only in thses levels of magnbitude, on the frequency curve & distortion. Now, why shold we buy mor eexpensive amps then? Is this bad news for anyone?The answer is no, for several reasons:1. More expenesive amps may have more extended operating characteristics. For example, a speaker may go as low as 1 ohm on certain frequencies, and a cheaper amp may not work there. 2. You can buy a ferrari for $250,000 or a porsche for $90,000, ith the porsche having better accelration, stopping, skidpad & overall performance than the ferrari. Do you think Ferrari should shut down? No. Many people would choose the ferrari for the name, the way it makes them feel, and the way it looks. A lot of audio jewellery is sold for these reasons as well. The problem occurs when certain unscrupulous manufacturers, magazines & reviewers perpetuate a myth that the more expensive amps have to SOUND better, and try to convince listeners that they should sound better. The truth is always the way to go: they don;t sound better, but that doesn't mean you shold buy the cheaper amp, unless you want to!Hope this adds more perpsective to the debate. -akhileshPS. TO directly answer your point about all solid state amps distorting sound the same way, the point is: if the original signal (WITHOUT an amplifier) and the signal through the amplifier differed only by say 0.3 db from 15,000 Hz on up, you couldn;t hear it. So dsolids state amps do NOT distort or alter the signal in any audible way. There is this thought that solid state sounds dead, but I would say it;s the opposite: Tube amps sound LIVE. In other words: tube amps do stuff to recordings that make them sound more live. Solid state amps pretty much reproduce whatever shlock you feed thru them, and a lot of the PM out there IS schlock!-akhilesh

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Manualblock on Tue, 10 Jan 2006 19:02:32 GMT
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We circle the wagons again ehh bud? This discussion will always be with us I guess but let me ask; is there any possibility there might be some kinds of distortions not readily apparent or easily measured with our existing technology? Have we reached the point where we have all the answers and no need to experiment any further? Should we say that all possible ways a signal can be tracked have been discovered and it is time to put the pencils down?There will never be another discovery made concerning how to measure the sound of an electronic device?Is it possible that the human ear can distinguish artifacts not readily apparent to a distortion meter? Why; if people say they like certain sounds and those people have not been exposed to this debate or do not know of the controversy surrounding whether we can genuininely tell if an amplifier sounds more like music than another amplifier does; must we negate their opinion as naive or useless?What about the people who never seek out high end gear or study how to listen to it or know nothing about it; or how much it costs; does their opinion count?These are the questions that plague me about this debate. We all know the usuall responses; they are impressed with the cost;They are impressed with the looks;They have a personal agenda, etc etc.But what about the people who know nothing of the equipment but play music on instruments; would their opinion count?I think it is too easy to dismiss the ones who listen to music but don't care about the equipment because they are not having this debate. But they should be the ones to do the tests with.

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by akhilesh on Wed, 11 Jan 2006 17:07:53 GMT
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Good points, John.One point to keep in mind is:We have intruments that are FAR more sensitive than the human ear to measure all aspects of a signal that we know (distortion,amplitude, frequency, etc). THe question of whether a signal is completely described by these aspects, or of there is a mysterious "X" aspect that will distinguish two signals that are identical in every way known to engineers is outside the domain of signal analysis, and could be termed philiosophical in nature. I suspect this "X" aspect is really the internal state of the listener, so, in a good modd a signal will sound one way to the subject, and if he/she were in a bad mood, the identical signal (identical from an engineering perspective) will be perceived quite differently by the same subject. -akhilesh

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Manualblock on Wed, 11 Jan 2006 18:10:58 GMT
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I agree with the analysis and understand the position that our measurement devices will accurately describe those aspects of a signal they define . It's just that if we know anything in science it is that we don't know everything. So yes; since it cannot at this time with our capabilities be described then you could say it lies within the realm of philosophy. Until that day comes when something new is discovered and the concepts revert back to the world of science.I think our instruments are still rather crude; think of all the ways the brain can distinguish sensory phenomena more delicate than any device can.There must be a reason some SS sounds different than other SS stuff does. The second mandate is this; if tubes sound more like music how can they be altering the signal to make the sound less like music??. It's a total contradiction of logic.Thats the part no one seems able to explain to any real satisfaction.I don't contradict anyother point of veiw here; this is my inability to rationalise the argument.I seek to take the impressions of sound out of the restrictions created by a sense of expectation that typically would accompany any test conducted by people in the hobby who have pre-conceived expectations.Thats why I suggested using neophyte's who are familiar with music and musical instrumentation. A stradivarious plays the same frequencies that a cheap violin plays; so how come all agree it sounds better?Every component measureable by instruments is there in both examples; but one sounds better...why?

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by akhilesh on Wed, 11 Jan 2006 21:35:38 GMT
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"The second mandate is this; if tubes sound more like music how can they be altering the signal to

make the sound less like music??. It's a total contradiction of logic. "John,In my post above in this thread, this is addressed. I have reproduced teh relevant text below:"The SECOND approach is: Buy imperfect components that somehow "mesh" together, often by cancelling out each other, and adding euphonic distortions, etc, and somehow make the whole sound musical. Often, they may actually make poorly recorded material sound more "natural" and also counter room issues. I believe ALL tube amp owners follow this approach (whether they admit to it or realize it or not)! It's fun. and can result in suprprising good sound, not to mention a collection of fun TUBE amps. "BTW, John, I have serious doubts that a stradivaius will measure the same as a cheap violin. It will differ along many aspects that are measurable (freq curve, distortion, spectral decay, etc). thanks-akhilesh

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Bob Brines on Wed, 11 Jan 2006 22:05:21 GMT
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I've been following this thread with interest, but I don't have anything usefully to add and didn't.A couple of points did peak my interest though and I will comment.1. Among classical musicians, some of the finest artists have some of the most awful stereos, and I don't use that word lightly. Thinking is that they KNOW what the music sounds like in concert. They are only listening to the performance, the notes. Some of these folks can have a thoroughly satisfying musical experience by simply reading a score. I guess it says something to listening to the music or listening to the equipment.2. Just of historical note: Virtually all of the playable Strads, Guanerii, Amati, etc. have been destroyed twice. Once in the lat 1800's and then again in the early 1900's. All of these instruments were rebuilt to allow them to play louder and to accommodate metal strings at a higher pitch. They sound nothing like what the makers intended.Bob

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Manualblock on Thu, 12 Jan 2006 01:30:53 GMT
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Actually Ak that is true; you did address that issue, but the issue of interest really is the easy dismissal of the argument by citing bias and influence as the cause of people preffering one system over another. This aspect of the debate begs the question since by definition then there are no valid personal opinions regarding the sound of electronic equipment. They are all manipulated by pre-concieved explanations. And still we run up against the possibility that there really is some difference not accesssd by the scopes and distortion meters. You know as a scientist that there are no absolutes.I didn't know about the re-structuring of the Strads and maybe that makes that argument moot. But what about say a Steinway Concert Grand?And yes; most musicians do have terrible systems; I always guessed it had to do with a lack of interest in listening casually. It will never approach real music so what is the need? However it also may have something to do with the notorious frugality of most musicians; who generally are tighter

than snare drums with a buck.

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Bob Brines on Thu, 12 Jan 2006 13:47:10 GMT
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I don't know that the discussion the the destruction of the great old violins is irrelevant. We still have to deal with reproducing exactly what was laid down on the recording. I vote for SS or tubes like the amp Jef Larson built for me as being most honest. But then, if something else adds "live" or whatever else that adds to one's enjoyment of the music, go for it.As for pianos, the history is different from the history of strings. Concert hall have always employed the latest and greatest pianos, relegating the old ones to museums. Today, even period performance forte-pianos are almost always copies, not originals.The evolution of the piano has been on on making the instrument louder in order to keep up with the larger, louder orchestras and the ever larger concert halls. The piano of Mozart's day had 66 keys. Extra bass notes kept getting added to increase the size of the sounding board and therefore louder. The modern grand piano has 88 keys and goes down to A=28 Hz, but the Bosendorfer model 290, the "Imperial Concert Grand", has 97 keys an goes down to C=16 Hz. While a handful of composers have actually use the bottom notes, that's not why there are there. They are there to make the piano louder.Bob
Bosendorfer Model 290

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by hurdy_gurdyman on Thu, 12 Jan 2006 14:10:13 GMT
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>However it also may have something to do with the notorious frugality of most musicians; who generally are tighter than snare drums with a buck.

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by hurdy_gurdyman on Thu, 12 Jan 2006 14:35:01 GMT
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It seems like the history of most modern musical instruments has been to make them louder. I have examples of different historical instruments (origional and/or replicas) of the instruments I play, including fiddle (violin to you educated folks), banjo, mandolin, guitar and bagpipes. Over the last couple of centuries they have all gotten louder. Each new innovation has been to make the instrument louder so it can be heard better in an orchestra (even a four piece one). Unfortunately, all the other instruments are doing the same evolution. The drawback (sacrifice?) of all this is that

the instruments get brighter and harsher sounding. An example would be the banjo (all banjo jokes aside). It started out with a gourd for a body and a fretless neck. This gave a nice mellow and thumpy sound. After a while someone replaced the gourd with a round wooden cheese box because it was sturdier and would take a beating better. It was noticed it became louder as well. Within a 100 year period all kinds of metal stuff was added, as well as harder wood, because each innovation made the instrument louder. It also made the instrument brighter and more metalic sounding. Frets were added, which added more brightness. Listen to a 1920's Gibson Mastertone like most Bluegrass banjos are patterned after, then listen to a 1850's minstrel banjo, then listen to an origional type gourd banjo (banjar). They don't even sound like the same class of instument. The modern one is almost unpleasant to listen to intimately. This seems to be similar to the evolution of the other instruments I'm very familiar with. I prefer the old styles for shear listening pleasure, just like I still enjoy tube amps and speakers that don't burn my ears off with etched detail. Sorry about the rant, but it's one of my pet peeves with music today and this seemed like a good place to vent. Dave

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Wayne Parham on Thu, 12 Jan 2006 14:39:54 GMT
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Interesting information about Stradivarius violins. I didn't know that, and it prompted me to do a little looking around about them. Thanks for the info.
 PhysicsWorld - Science and the Stradivarius

Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Wayne Parham on Thu, 12 Jan 2006 14:42:24 GMT
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Interesting info about banjos and banyars. Makes sense.

Subject: More on old instruments
Posted by Bob Brines on Thu, 12 Jan 2006 15:13:21 GMT
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Sigh, ain't it the truth.My chosen instrument is the recorder. Due to the physics of the instrument, it could not be made louder. The new fangled transverse flute could and by 1740 or so, the recorder ceased to exist in art music. There have been a few pieces written for recorder in the late 1900's, mainly on commission from modern recorder players who owe their artistic lives to the revival of baroque period instrument performances.To give you an idea of the relative power of various

instruments, Bach's Brandenburg Concerto #2 of 1721 uses solo recorder, oboe, violin and trumpet! and a chamber orchestra, and #4 uses two recorder and violin. But as early as 1728, Vivaldi mutes the strings in the recorder concerto RV442, published as a flute concerto Op10 #5, RV434.As Dave says about banjos, give a listen to recorders, baroque flutes (the same basic sound persisted up to Beethoven's time) and modern flutes.Bob

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by Manualblock on Thu, 12 Jan 2006 15:41:56 GMT
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Nice stuff; this is the purpose of forums; to elucidate and educate and these posts fill both requirements I could read this stuff all the time and be happy.One last thing; has anyone read or been made aware of any studies using current methodologies to measure period instruments and compare their sonic attributes to modern examples? I think I read something ahwile back regarding a university study dealing with that issue.Dave; I play also and thats how I know about cheap musicians; join the club!

Subject: Cool link Wayne, and esp one para
Posted by akhilesh on Thu, 12 Jan 2006 16:37:49 GMT
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"In practice, quite small changes in the arching, thickness and mass of the individual plates can result in big changes in the resonant frequencies of the violin, which is why no two instruments ever sound exactly alike. The multi-resonant response leads to dramatic variations in the amplitudes of individual partials for any note played on the violin. "Clearly indicates that viol;ins that sound different MEASURE very different. -akhilesh

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Subject: Re: Thought experiment & why sonic indistinguishability is not a bad thing
Posted by akhilesh on Thu, 12 Jan 2006 16:40:12 GMT
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"Among classical musicians, some of the finest artists have some of the most awful stereos, and I don't use that word lightly."You are right, Bob. They focus on CONTENT, to the total excusivity of PRESENTATION. Many audiophiles have been accused of focusing too much on presentation (in other words the system and how it reporduces) and ignoring the content. Musicians tend to swing the other way, and are relatively indifferent to fidelity of the reeproducing system. Good point-akhilesh

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Subject: Re: Cool link Wayne, and esp one para
Posted by hurdy_gurdyman on Thu, 12 Jan 2006 16:49:59 GMT
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It's interesting to note that even loudspeaker manufacturers can't get every driver of a certain model to sound and measure exactly alike. Small differences in things like suspension and cone thickness cumulate to make variations in T/S parameters like fs and Qts. I've read of some people who measure fs of a given driver to be off as much as +/- 10 dB. It's just very hard to get a vibrating surface to perform exactly like another. That's why it's usually recommended to measure each driver individually before designing a given enclosure.Dave

Subject: Re: More on old instruments
Posted by hurdy_gurdyman on Thu, 12 Jan 2006 17:06:15 GMT
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Bob,I have a couple of inexpensive recorders I play around on, and my daughter has a few primitive flutes. I'll take the recorder sound anyday.It's also a shame that the standard pitch has risen through the years. The mellower sound of previous centuries was more pleasant to listen to.Adding to my banjo comments, early banjos were typically tuned to around A or E (depending on which type of tuning pattern was prefered) while modern banjos are tuned higher to C or G.I have an old fiddle built around 1800 that has been in my family since before the Civil War. It's neck is about a half inch shorter than modern fiddles. It was designed, like Strads, to be pitched to a lower pitch (I'm thinking around 415Hz vs today's 450Hz, but I'm going from memory and could be off). My old fiddle sounds it's best when tuned with gut strings designed for lower pitch and tuned that way. Unfortunately, nobody I know in this area play in that tuning, so long ago I resigned myself to todays standard pitch. However, I refuse to put a longer neck on the instrument to optimise for higher pitch. It sounds good as is but has a darker tone than what you normally hear. I like it!Dave

Subject: Parameter shifts
Posted by Wayne Parham on Thu, 12 Jan 2006 18:21:47 GMT
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There are changes in electro-mechanical parameters even in a single device at different operating levels. And there is a shift over time. I prefer to use alignments that are relatively insensitive to these shifts, basically systems with a wide tolerance. You can model a system at various operating points to see how it will act, and then if industrious enough, measure a physical model at several power levels to see if it performs as expected. I think a system should be designed to allow for pretty wide shifts in driver parameters, because that's what it will encounter. A side benefit of this is that small tolerance changes in component production runs won't matter so much.

Subject: Re: More on old instruments
Posted by Wayne Parham on Thu, 12 Jan 2006 18:25:29 GMT
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That's really cool, Dave. I have always been impressed with your experience with these kinds of (rather exotic) stringed instruments.One thing has me puzzled, so I must be missing something. If the neck is made longer, that would seem to imply a lower frequency. But you indicated it would optimize for a higher note. I'm guessing the strings you prefer must be thicker and heavier, or you must tighten them less. Is that the case, or what am I missing?

Subject: I agree
Posted by akhilesh on Thu, 12 Jan 2006 20:48:35 GMT
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That's why I like ot use drivers well within their ranges, and do a 3 way set up as opposed to a 2 way. -akhilesh

Subject: Re: More on old instruments
Posted by hurdy_gurdyman on Thu, 12 Jan 2006 23:31:03 GMT
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Wayne,The shorter neck and lower pitch was because of the very soft tension strength of pure gut strings used at the time. Todays strings are much stronger and can be made tighter. Tighter means louder, with brighter being a side effct.BTW, I stated todays standad pitch as 450Hz. That was a typo. It should have read "440Hz".Dave

Subject: Re: More on old instruments
Posted by Bob Brines on Fri, 13 Jan 2006 02:55:34 GMT
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Dave,I've played one-keyed flutes, and I can tell you that they are a mother-bear to play in tune. Cross-fingering doesn't work nearly as well on a flute as it does on a recorder, oboe or clarinet. You can tell if one of these is being used in a recording by the F, G# and Bb being either out of tune or at a lower volume level. The 4-keyed flute of Mozart's time didn't have the intonation problem, but both 1- and 4- key flutes have a very fuzzy attack. Dead give away in a recording.Pitch ~1700 and earlier was A=405. That rose to 415 for most of the 1700's and 1800's. The modern pitch is 440, although some orchestras like the Berlin Philharmonic are rumored to

use as high as 456 to give the orchestra a "bright" sound, something like plywood cabinets. OK, I'm sorry. I'm sorry. Anyway, all of my recorders are pitched at 440 so they can be played with modern instruments.Bob

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Subject: Re: I agree
Posted by Wayne Parham on Fri, 13 Jan 2006 03:29:37 GMT
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Well, sometimes that's true. Probably most times, given good components are used and care is taken to ensure the crossover is worked out. But I've heard some damn fine two-ways, some that were much better than most three-ways. I'd take a DI matched two-way with a smooth midwoofer and tweeter horn over most any typical direct-radiating three-way, even one made with the best components. But all other things being equal, a nice three-way done right is going to win out, sort of like a good big block beats a good small block.

Subject: "Something like plywood cabinets"
Posted by Wayne Parham on Fri, 13 Jan 2006 15:11:26 GMT
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Subject: History of musical scales
Posted by Wayne Parham on Fri, 13 Jan 2006 15:25:42 GMT
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Gotcha. You were referring to A above middle C.Cool links related to your discussion, the history of musical scales:The Musical ScaleHistory of PitchMath and Music: A Primer

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