Subject: Sound characteristics of different horn flares and materials
Posted by Peter Krojgaard on Mon, 27 May 2002 04:05:22 GMT
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Hi Wayne, (and others)!You sell both exponential horn flares made of different materials (e.g. aluminium and wood) and Bruce Edgar's tractrix "salad bowls".1. Could you please elaborate on the differences in sound between these different horns?2. I prefer a very CLEAR sound. Which of the horn kinds would you recommend keeping that particular preference in mind?Thank you very much in advance. Others are more than welcome too to contribute with their experiences, of course!Regards,pk

Subject: Re: Sound characteristics of different horn flares and materials
Posted by Wayne Parham on Mon, 27 May 2002 05:55:43 GMT
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I prefer 90x40 horns because they provide a good pattern in-room, especially when used in cornerhorns. That's a unique situation because directivity is equal throughout the entire audio band if all horns have a 90 degree pattern. This makes the reverberent field uniform, and I think that sounds most natural. But all of the horns you've mentioned sound very good to me.

Subject: How about the sound of CD horns then?
Posted by Peter Krojgaard on Mon, 27 May 2002 06:27:21 GMT
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Hi Wayne,Thanks for a thorough reply (as always)!A third "kind"(?) of flare is the so-called Constant Directivity horns. At least from a distance they "look" quite similar to the purely exponential horns, although I understand that they are somewhat different mathematicially.Do you also find that CD-horns are almost similar in SOUND compared to purely exponential and round tractrix horns, or do CD-horns have different sound characteristics?Thanks again!RegardsPeter

Subject: Re: Sound characteristics of different horn flares and materials
Posted by JLM on Mon, 27 May 2002 09:37:53 GMT
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Wayne, please help those of us who are just plain ignorant and define the terms you've used and give examples.Thanks a ton for all you do.

Subject: Re: How about the sound of CD horns then?
Posted by Wayne Parham on Mon, 27 May 2002 12:42:56 GMT
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Axisymmetric CD horns sound midrange heavy and require equalization to sound right. I prefer 90o radial horns, which provide constant directivity in the horizontal plane. That ensures room coverage is good and the reverberent field is uniform. But it doesn't need quite as much EQ because it has collapsing DI in the vertical plane at high frequencies. Please see the post called "Characteristics of various horn flares" for more information.

Subject: Re: Sound characteristics of different horn flares and materials
Posted by Wayne Parham on Mon, 27 May 2002 14:16:43 GMT
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I'm not sure what terms you are looking for, but you might look at the post called "Characteristics of various horn flares" for more information.

Subject: Re: Sound characteristics of different horn flares and materials
Posted by Tom Brennan on Mon, 27 May 2002 22:28:28 GMT
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pk---I never heard a horn and good driver that wasn't clear and I've heard lots of them, clarity ain't a problem. Dispersion makes a big difference in the sound of the horn IME. I have some 130 degree McCauley horn-lenses and they bounce lots of sound off the sidewalls making for a "big", diffuse kind of sound with a very wide image. With 90 degree horns like Altec 511s the image draws in and sounds more "collected", I like that better. But the big image I got from 120 degree

EV SM-120As was far better than the stock K-400 horns on some Klipsch LaScalas I had, the stock horns were so directive, like a laser it seemed, they gave me big-time earwire (like a wire being twisted in your ears). Now I use Edgar "saladbowls" and all I can say is they sound "right". Supposedly the tractrix curve gives a better launch to the soundwaves, I dunno but they sound good. I've used Altec, EV, JBL, PAudio, McCauley and Klipsch horn flares, I prefer the Edgars, 2nd best is the Altec 511B. My opinions ya understand. Here's a funny thing though. One day Paul Eizik came over with his home-made tractrix horns and we spent the afternoon listening to a variety of horns and drivers: Paul's horns, the Edgars, Altec 511s with 4 different sets of Altec and JBL drivers, mixing and matching. You know what? They ALL sounded good. Yeah, you could hear a difference going from say, Paul's horns with JBL 2426s to JBL LE-175s on Edgars to Altec 806s on 511s, but the differences were in detail not in quality and after a few minutes we were just listening to the music and forgetting about which horn-drivers were in use. Horns are low distortion-high clarity devices, once you have that going the music sounds good.

Subject: Re: Sound characteristics of different horn flares and materials
Posted by RJW on Mon, 27 May 2002 23:30:44 GMT
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Wayne or Anyone,Are there pictures?I've seen pictures of Dr. Edgars on other (his own) speakers but not Pi's. I'm interested in the Pi4 Hf configuration. Dr. Ed's cool, my personal prejudice. He's in the Gods of Gearheads Club!Thanks Ron

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Subject: Re: Sound characteristics of different horn flares and materials
Posted by RJW on Mon, 27 May 2002 23:36:41 GMT
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Wayne,Thanks, nice post.Ron

Subject: Re: Sound characteristics of different horn flares and materials
Posted by Wayne Parham on Mon, 27 May 2002 23:47:27 GMT
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I do not use Edgar horns in my designs; I have made them available on my shopping cart because Bruce doesn't have a website for people to be able to purchase from.

Subject: Re: Sound characteristics of different horn flares and materials
Posted by str8aro on Tue, 28 May 2002 01:05:12 GMT
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Hi pk,For a clear sound, my choice would be a constant directivity horn - that is, one with straight sides. No nasty narrow throats with parallel walls, though - just a horn that looks like a pyramid. As Wayne noted, this kind of horn will be all midrange and no treble. This is because the response will be identical to the compression driver's power response. The solution is to eq the horn to get a flat response. On my current horn, I get fairly flat response with a 1st order Butterworth highpass at around 6khz, but every driver and horn combination would be a bit different. I do this with an active filter, btw.I personally like the controlled directivity a horn like this offers. In my room, a 40x40 horn covers an area much larger than my listening position, but substantially reduces room interactions. This might be one reason it sounds clear to me. The other is probably that this type of horn has the lowest throat distortion due to its more rapid expansion near the throat.John

Subject: Thanks a lot to you all! (nt)
Posted by Peter Krojgaard on Tue, 28 May 2002 16:17:08 GMT
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nt