Subject: SPL rating affected by horn?
Posted by tom-m on Sat, 02 Oct 2021 14:51:34 GMT
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Hi all,

Do different horns change the combined SPL of a compression driver horn combo?

More specifically, does a narrower horn, say a 60 degree horizontal horn versus a 90 degree horizontal horn change the 1 watt at 1 meter SPL? Same compression driver.
Since the narrower horn is concentrating the output energy, would it have a higher SPL measurement at 1 watt? If so, how much higher on average?

Thanks,
Tom

Subject: Re: SPL rating affected by horn?
Posted by Wayne Parham on Sat, 02 Oct 2021 15:16:38 GMT
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That's exactly right. Horns with narrower patterns deliver higher SPL, and for exactly the reason you describe: Directivity.

And horns that have non-uniform directivity change the response too. That's how horns with collapsing directivity increase on-axis SPL as frequency rises, partially or fully compensating for mass-rolloff. It's also why constant-directivity horns do not compensate for mass rolloff and need "CD equalization."

Subject: Re: SPL rating affected by horn?
Posted by tom-m on Sun, 03 Oct 2021 04:27:54 GMT
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Thanks Wayne!