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Subject: Fts

Posted by [Ralph](#) on Wed, 04 Aug 2004 22:24:34 GMT

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I did an experiment today to see Fts shift when a speaker was put on a baffle with a hole smaller than  $S_d$  and on a baffle with no hole at all. Fts in free air was 42 hz. Here are the results: Free air - 42 hz Baffle with 40%  $S_d$  opening - 38 hz Baffle with no opening - 158 hz As I expected, when the speaker was mounted face down on a board with no opening, Fts went up because of the small sealed volume between the cone and board. What I didn't expect is Fts went down when the speaker was mounted on a board with a hole smaller than  $S_d$ . I can understand that a sealed box makes the speaker stiffer and raises Fts. I accept Bill Fitzmaurice's explanation that when there is a hole in the baffle, the air mass between the cone and board is allowed to move, so its mass adds to the cone mass, tending to shift Fts down. This means there must be two opposing forces, one stiffness and the other mass. Duh, of course that is the case. I wonder what size hole strikes a balance between stiffness and mass so Fts isn't changed?

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Subject: Re: Fts

Posted by [Bill Fitzmaurice](#) on Thu, 05 Aug 2004 01:52:50 GMT

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You'll find that even an opening in the baffle equal to  $S_d$  will lower  $F_s$  somewhat;  $F_s$  is traditionally measured with the driver suspended in the air away from boundaries so as not to corrupt the result.

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