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Subject: Re: Audio Note power transformer

Posted by [Wayne Parham](#) on Mon, 28 Apr 2008 17:10:14 GMT

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That makes a lot of sense. Thanks for the advice. I've noticed a similar phenomenon in loudspeakers when used at very high power levels. A significant amount of heat is generated within the core from magnetic loss, adding to the heat transferred from the coil by radiation. The biggest thing we all watch out for is voice coil heat, and the most popular cooling method is convection using vents. But we often overlook center pole heating caused by radiation and magnetic loss, which sometimes makes the core reach temperatures in excess of 200°F. Inside a speaker run at high power levels, the core temperature gets hot enough to cook with. It's surrounded by the magnet, forming a sort of thermos bottle that is very effective at holding the heat in. Over time, it bakes the voice coil adhesive and eventually causes it to break down, the coil unwinds and the speaker fails. This is the most common cause of speaker failure, far more common than voice coil fusing. This is exactly the same thing you're saying happens inside transformers. Makes sense.

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