Subject: Why do speakers fail?
Posted by Lohan on Sat, 27 Jan 2018 00:41:40 GMT
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What is it that makes speakers fail? Is it due to poor design or are not well made? Or is it usually because of them taking on more power than they can handle?

Subject: Re: Why do speakers fail?
Posted by Wayne Parham on Sat, 27 Jan 2018 15:41:09 GMT
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The most common cause of loudspeaker failure is heat. Running a speaker for a period of time (usually several minutes) over its maximum power handling ability causes heat to increase in the motor core. Eventually the glue that holds the voice coil fails and the edge of the winding comes loose. Then the speaker begins to buzz when played. After a while, the loose winding may catch and break, and then the speaker no longer makes any sound at all.

The second most common cause of failure is over-excursion. When too much bass is sent to the speaker for its suspension to handle, the voice coil former strikes the back plate or some other suspension component is pushed past its limits, causing it to be deformed, torn or broken.

There are less common failure modes too. An instantaneous energy surge can cause the voice coil to melt. This is rare, but it happens, usually as a result of an amplifier malfunction. And of course, there are cases where the speaker is mechanically damaged by something striking or penetrating the cone/diaphragm, or by something covering the cone with liquid or other material, etc.

Subject: Re: Why do speakers fail?
Posted by AudioFred on Mon, 29 Jan 2018 01:48:34 GMT
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One of my son's speakers failed because it chose to die after playing his heavy metal at ear-splitting volume levels hour after hour. Wayne would probably disagree and suggest the voice coil burned up, but I still think the speaker chose it's own fate.

Subject: Re: Why do speakers fail?
Posted by Wayne Parham on Mon, 29 Jan 2018 02:36:03 GMT
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Subject: Re: Why do speakers fail?
Posted by Lohan on Mon, 29 Jan 2018 09:26:20 GMT
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I know what you mean, AudioFred. I find it really frustrating when a speaker just dies for no apparent reason. Anyway, it's good to know what some of the causes are so I can take better care of them in the future.

Subject: Re: Why do speakers fail?
Posted by Silver on Fri, 02 Feb 2018 18:00:02 GMT
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Keep them clean too. Dust in the inner workings isn't good.

When I was younger I would go through speakers quite fast, and I now blame it on how loud and how often I used them.