

Is a train's risk of derailment affected by its length?

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Longer freight trains are more likely to derail compared with shorter

trains, according to new research published in *Risk Analysis*. The increased risk held even after accounting for the need for fewer trains if more cars were on each train.

For the study, investigators assessed information on US freight train accidents between 2013–2022 from Federal Railroad Administration databases. The team found that running 100-car trains would lead to an 11% higher risk of derailment compared with running 50-car trains, even when accounting for the fact that only half as many 100-car trains would need to run. For 200-car trains, the risk was 24% higher than for 50-car trains.

"Because the Federal Railroad Administration doesn't collect [data](#) on the length of trains that aren't in [accidents](#), this research involved some innovative modeling that we explain in detail in the paper, but the increased risk of longer trains is clearly shown," said corresponding author Robin L. Dillon, Ph.D., of Georgetown University.

More information: The Relationship between Freight Train Length and the Risk of Derailment, *Risk Analysis* (2024). [DOI: 10.1111/risa.14312](#)

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