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Improving Maglev Safety

Maglev is a completely new way of transportation that will join the boat, the car, and the airplane as a mainstay in transporting people and goods. Maglev has unique advantages over these earlier modes of transport. Maglev will radically transform society and the world economy in the 21st century. The engineering goal of this project was to design a new, unique braking system that has more advantages than the breaking system that we are using today for theses advanced systems. This braking system will create will use only electromagnets and permanent magnets when stopping the Maglev model. The reliability of the breaking system will be tested by varying the length of the Maglev models as well as the amount of magnets inside the Maglev model. Each Maglev model will be levitating approximately three millimeters due to opposing forces of permanent magnets on the model as well on the rail. A drawer slider at the beginning of the track with a magnet will be the source of propulsion. This unique braking system has a reliability percentage average of 86.33% after 100 trials for each different size of Maglev model. One of the models did not have any failures of any sort during the 100 trials. After 300 trials of testing, my new braking system performed reliably. Redesign recommendations include reducing the amount of friction. My braking system could have also been improved by creating scaled models of Maglev systems to give a more accurate comparison to actual Maglev systems.