Can Parachutes Be Used to Replace Runaway Ramps?

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Runaway ramps have been used for years to help save runaway trucks; however, they are not always effective and can be costly. Can a parachute design be constructed to slow large transport vehicles to a reasonable speed to avoid the damage and danger of runaway ramps? It is expected that a parachute design can be constructed to reduce the speed of a 40 ton vehicle by 60% so that it can complete a corner at the bottom of a mountain or a hill. A 1/27th scale model 18 wheel truck was constructed. A ramp was created from metal to simulate the 10% grade of a mountain. Next three parachutes were designed with an aria of 12100cm2. A square, a parasail (rectangle) and a circle were constructed. They were tested 10 time down the track and the average time was recorded. The data was compared to the control. The parasail had 47.5% more drag than the control. It also had the best strength and stability over the other parachutes. It had 3.7% more drag than the circle and 12.0% more than the square parachute. The parasail lifted slightly above the rear of the 18 wheel truck keeping it out of the way of following vehicles. The system of using a parachute to replace costly runaway ramps could be a practical and safe way to the future of 18 wheel trucks and general vehicle safety.

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