Teton Pass vehicle arrestor system

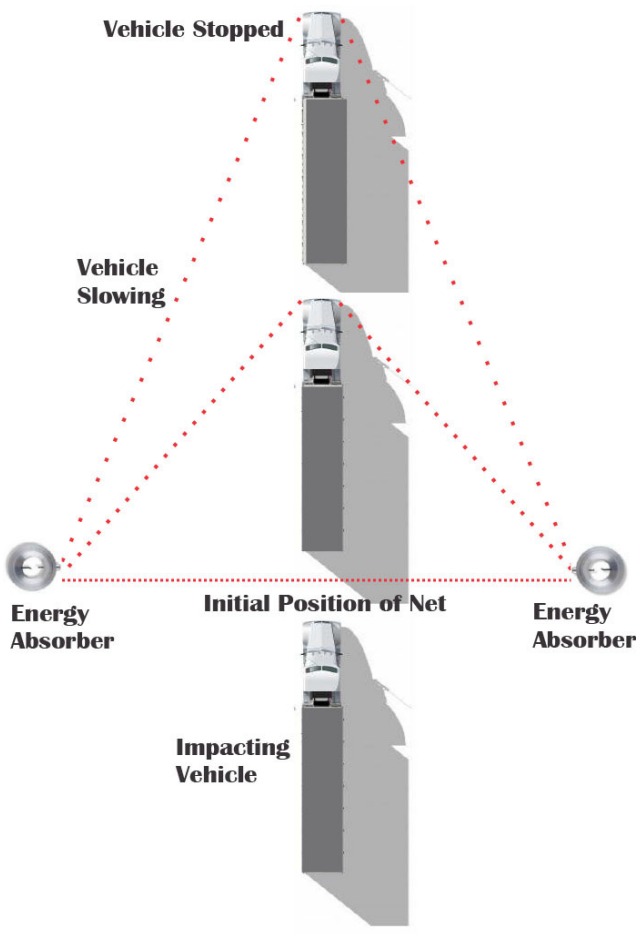
What is an arrestor?

The Wyoming Department of Transportation has been researching the best system to stop runaway trucks on Wyoming's steep passes. On Highway 22 Teton Pass, WYDOT has installed a truck arrestor system and now is planning to construct a second one as well.

The truck arrestor system, sometimes referred to as a "Catchnet" system, works similarly to the way a jet plane is stopped on an aircraft carrier. The arrestor employs a system of cables and canisters of energy absorbing tape that expand to absorb the speed and force of the truck.

The design allows less distance to catch a vehicle and allows placement where a typical runaway ramp would not, preventing trucks from having to cross head on traffic to utilize the system.

How does it work?



The Dragnet Truck Escape System is comprised of a series of nets set up along a truck escape ramp. The array of nets is arranged in such a manner so as to stop the vehicle in the distance allowed, while minimizing the deceleration forces. These nets, which are made of aircraft cable, can have one or two energy absorbers connected on each side.

The energy absorbers, in turn, are mounted within the concrete walls of the truck escape ramp. Dragnet's energy absorbers use a patented metal bender principle for absorbing energy, which provides the means to stop vehicles of varying weights and speeds.

The absorbers are primarily comprised of a chamber, a length of metal tape, and a series of offset pins. As the metal tape is pulled through the series of offset pins, the tape is bent back and forth beyond its yield point. The process of bending the metal beyond its yield point is the principal mechanism for absorbing the energy of impact.

The absorbers utilize few moving parts, making them virtually maintenance free. Following an arrestment, the system can be quickly returned to service by replacing the metal tapes with minimal time and effort.

The variables involved with determining the stopping distance and "g" load response of a system are **vehicle weight, vehicle speed, and net width.** Dragnet Truck Escape Systems have been designed to stop a wide range of vehicles weighing up to and including 90,000 pounds and traveling up to 90 mph.

An 1,800 pound vehicle impacting a 30-foot wide net at a speed of 62 mph will stop in approximately 39 feet with an average deceleration of approximately 3.3 g's. A 4,500 pound vehicle impacting a 30-foot wide net at a speed of 62 mph will stop in approximately 83 feet with an average deceleration of approximately 1.6 g's.