



2009 ASCE Pacific Northwest Regional Student Conference
Transportation Event: Crash Attenuator

Introduction

Roadside objects can pose a threat to drivers' safety, particular on high-speed and two-lane highways. When there is a limited amount of right-of-way for a road, the clear zones (the distance on both sides of road that should be kept clear) may be minimal. By placing roadside objects (such as telephone poles, signs, guard-rail ends, etc.) close to the road, they become hazards because drivers that run off the road are more likely to hit them.

Objects inside the clear zones are required by most highway agencies to be either break-away or protected. Crash attenuators are placed around or in front of objects that drivers are likely to hit. They can be buckets filled with water (mixed with antifreeze, of course) or sand, or they can be rubber devices, typically found at the end of guard-rails. These attenuators lessen the severity of the crash, absorbing energy of the collision by crumpling or compressing.

The Event

The task for this transportation event is to design a crash attenuator using a supplied kit. Each school may field one team consisting of 1-3 members. Each team will be given a kit, whose contents will be untold until the event, and a limited time for design/construction. The completed attenuator will be placed at the bottom of a ramp in front of an immovable steel object. A toy pick-up truck with an egg in the bed will run down the ramp into the crash attenuator. The purpose is to design the attenuator so that the egg (the passenger) does not crack. Teams whose egg survives move onto the next elimination round, until one victorious design remains. Thus, "elasticity" or repeat performance of the crash attenuator may be a virtue.

Sponsored/Facilitated by: Institute of Transportation Engineers (ITE) MSU Student Chapter

When: Friday April 3, 2009, 10:00 am — 12:00 noon

Where: PE Complex Upper Gym

For planning purposes, please email andersl@ce.montana.edu by Wednesday March 25 if your school would like to participate in this event. Thank you.