

Project Title: 30% Offset RIG Guard
Team Members: Mahad Ahmed
Daniel Crawford
Jonathan Schuller
Sebastian Spieth
Faculty Advisor: Dr. Bongsu Kang
Area: Mechanical Engineering
Sponsor: STRICK Trailers LLC

Strick Trailers LLC of Monroe, Indiana is a nationwide supplier of dry freight trailers. They are seeking to develop an alternative, optimized RIG design capable of meeting all performance characteristics of Strick's current, TOUGHGUARD certified Rear Impact Guard (RIG). This certification recognizes RIG designs that go above and beyond what is required by federal regulations. This certification entails a 100%, 50%, and 30% offset crash test of the trailer's rear impact guard (RIG) with a 2010 Chevy Malibu. Although the crash test is the ultimate test to achieve this certification, Strick Trailers go forward with conducting a quasistatic test to emulate the force the RIG would endure within a crash test. Currently Strick has met these standards with their Strick GardX RIG design. Strick is seeking assistance in developing a more effective design that would reduce cost, weight, ease of manufacturing, and manufacturing time. This new design must be compatible with Strick's ordinary connection points on the trailer and only their trailer so that Strick's design cannot be installed on other trailers for liability reasons. The design must follow the regulations set by the National Highway Transportation Safety Administration (NHTSA) and Transport Canada for the dimensions of the impact bar and must be able to achieve the Tough Guard certification.