

With spring and the MLB season soon to start, it felt appropriate to have a little fun.

The message presented: *If a rear impact structure is too rigid, it may change the path of a light vehicle, risking others.*

Here is my “slide” into this ***mischaracterization***. . .

Home base

Some structures of a vehicle lack the ability to dissipate adequate energy. This is unfortunately demonstrated by sedans that run under and out the other side of a trailer. A-pillars and roof structures fundamentally lack.

Other structures are meant to dissipate incredible amounts of energy. Crumple zones are a great example. Modern vehicles demonstrate exceedingly well with the rigid barrier testing standard having been raised to 40mph.

Rigid barriers exist on trucks and trailers today, as demonstrated through the axles.

Breaking the Bat

Failure is a rapid transition from an energy absorbing, to not. Think of Barry Bonds swinging a whiffle ball bat, or a trailer bumper failing. More energy than the structures can handle, and the baseball or car keeps on going. Luckily, we have better designs for both.

A Catcher’s Mitt

Through impact with a trailer axle or a substantial trailer bumper structure, both render a vehicle immobile and unable to continue rolling. Taking the roof off does not render a car immobile. The palm, not the fingers, stops the ball.

Throwing the Ball

It is more difficult to hit a farther away target. A trailer axle and bumper are similar sized targets, but axle-forward position can add substantial distance. A miss might mean a continued trajectory.

Pop Fly

Much like hitting the top of the bat sends the ball up, offset impact loading can cause a car to rotate. With lesser bumper designs, this rotation may unfortunately occur inward about the vertical members. Easier to hit a pop fly.

Jared Bryson, March 7, 2023