

REAR-END COLLISIONS

ALLIANZ RISK CONSULTING



INTRODUCTION



We see it every day - cars with crumpled hoods or

smashed rear bumpers and trunks, usually the result of rear-end collisions. Speed, day-dreaming, distracted driving or aggressive driving are frequent causes. A rear-end collision usually occurs when we least expect it - usually when we take our eyes off the road for "just a second." You look up and see that the car ahead of you has stopped. Sometimes you're the victim. You look in your rear-view mirror and watch helplessly as the driver behind you slams on his brakes in an unsuccessful attempt to avoid smashing into you.

WHY DO REAR-END COLLISIONS OCCUR?

Driver inattention is by far, the most common cause of rear-end collisions. Other causes generally fall into three categories:

1. **Equipment** (brakes, signals, lights, mirrors)
2. **Circumstances**
 - Internal (work pressure, unrealistic expectations)
 - External (road construction, detours, bad weather, blocked view)
3. **Driver** (fatigue, poor health, inexperience, bad habits and poor attitude)

Fleet management should evaluate each of these areas of operation to assure that procedures and controls are in place to help reduce the likelihood of rear-end collisions.

Equipment

In general, management can exercise the greatest control over equipment issues and concerns. Management should ensure that the entire fleet is properly maintained and in good working condition. Scheduled or periodic equipment inspections should include brakes, tires, mirrors, horns, and windshield wipers.

Most maintenance managers recommend a complete brake system inspection by a qualified mechanic every 12,000-15,000 miles. Driver's daily reports should include a notation for any braking problems such as a soft pedal or pulling of the steering wheel when stopping.

Tires should also be inspected regularly and maintained according to manufacturer's recommended tire pressure, and rotated regularly to assure even tread wear. Tires showing excessive wear should be replaced.

Circumstances

Management has little or no control over the presence, duration, or severity of external circumstances. Rain, snow, highway construction, and traffic congestion are examples of these external circumstances.

However, fleet management can influence the degree to which these circumstances can affect operations. Consider the following:

- Alter schedules to avoid peak traffic hours.
- Change routes to avoid construction or highly congested areas.
- Adjust delivery times
- Plan to avoid areas prone to hazards or delays during certain days of the week or times of year.
- Reduce customer's expectations and demands for "rush" deliveries.

Overall, management needs to explain that they support and expect safe, accident-free delivery of goods and products.



Distracted driving can be due to texting and can lead to rear-end collisions

Drivers

A driver's knowledge, skills, training and judgment are essential elements in accident prevention. Include a distracted driving policy within your driver safety program. Nearly one third of all motor vehicle accidents are the result of rear-end collisions according to the National Highway Traffic Safety Administration (NHTSA) "[http:// safebraking.com nhtsa-28-of-crashes-are-rear-end-collisions/](http://safebraking.com/nhtsa-28-of-crashes-are-rear-end-collisions/)". Common causes of rear-end collisions include:

- Speeding
- Distracted driving (i.e. texting, reading, eating, etc.)
- Heavy traffic
- Road rage
- Mechanical failure
- Fatigued driving
- Driving under the influence of alcohol or drugs

Additionally, there are two practical methods used in the transportation industry that can help your drivers reduce likelihood of being involved in a rear-end collision.

They are:

- Adequate following distance
- Safe stopping position

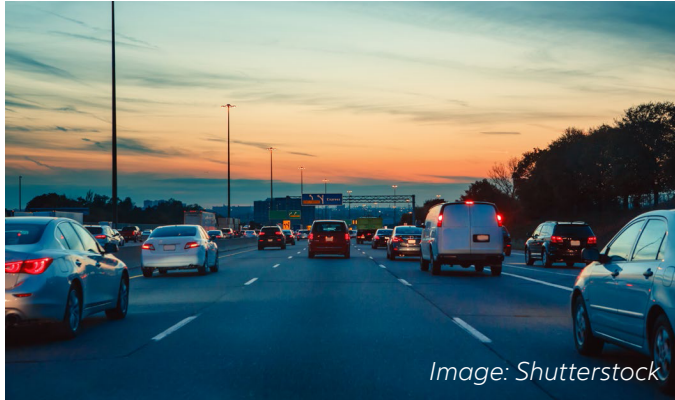
Adequate following distance

The easiest solution is to train drivers to maintain an adequate distance from the vehicle in front of their vehicle (sometimes referred to as the "timed distance approach," or the "two-second rule").

- The purpose of maintaining an adequate following distance is to allow for reaction time, which provides more stopping distance between vehicles.
- The proper following distance will allow an attentive driver to come to a smooth, controlled stop. This also helps to alert the traffic behind the driver of the slowing traffic, giving everyone plenty of time to avoid a collision.
- A driver can determine a safe following distance by counting the seconds between the moment the vehicle in front passes a fixed object (sign, tree, overpass, shadow, intersection, and such) and when the driver passes the same object.

- A minimum two-second interval is recommended. The interval increases with the size and weight of the following vehicle and road conditions.

Be sure to check your local traffic control laws to determine the minimum following distance required by such laws.



Maintaining a proper following distance allows the attentive driver to come to a smooth, controlled stop

Safe stopping position

A second, less familiar technique is called the “safe stopping position”. The stopping position is defined as “the distance that a driver normally takes to stop in relation to the vehicle in front”.

- Like acceleration or deceleration, drivers have habits that they sub-consciously and consistently apply when driving.
- Drivers who habitually follow closely and/or come to a stop closer to the vehicle in front than others will be more likely to collide if conditions change and they are forced to make a quick stop.
- Train your drivers to be prepared for unexpected conditions that may affect their ability to stop within a safe distance.
- Developing a safe stopping position provides a safety cushion that helps prevent collisions, and alerts drivers behind of changes in the traffic patterns ahead.
- This position will also allow a driver to change lanes safely and go around a vehicle stopped in front (without backing up) if that vehicle is disabled.
- This space (usually about 10’ for sedans) provides a

crucial “creep ahead” safety cushion if a driver sees the vehicle in the rear skidding toward him in the rear view mirror.

- In a sedan, a driver can learn to visualize an adequate stopping position by looking at the tires of the vehicle in front. Generally, if you can see pavement between you and the car in front - where his rear tires touch the road - chances are you are stopping in a position that provides an adequate safety cushion. (Note: The perspective is different with cab-over trucks and midengine vans). If you cannot see the tires of the vehicle in front touching the pavement, chances are your “habitual stopping position” is putting you at greater risk of a collision in a sudden stop situation.
- The objective is to come to rest smoothly in this position without sudden “panic” stops. Having a mental picture of where and how you want to stop allows you to anticipate braking situations earlier.

Fleet management must be committed to this change in driver’s habits. Work with your fleet drivers to help them change old driving habits and develop better timed following distances or better stopping positions by assuring that they have a new awareness of safety options.

Reinforce these techniques by instructing your drivers to take a mental note of the number of times they are forced to hit their brakes hard to avoid rear-end collisions. As driving habits change, they will find that the frequency of “panic stops” will decrease, resulting in a lower collision rate and fewer losses.



Monitor the road and beware of aggressive, emotional drivers who can follow too closely and cause accidents

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