

Vehicles Don't Cause Crashes. People Do.

By Del Lisk, Vice President, Safety Services, Drivecam

Background

Since DriveCam's focus is on identifying and correcting risky driving behavior, we have collected millions of events and created the world's largest repository of events reflecting actual risky driving behaviors and crashes. As a by-product of this, we have several thousand video clips involving traffic collisions. It is this video data that provides the insights that follow.

Every year there are nearly 368,000 crashes in commercial motor vehicles. The consequences of these mishaps are huge. In 2006, 4,321 people were killed in these crashes and 77,000 were injured. With the average crash costing \$91,112 that's a total \$33.5 billion! (FMCSA Commercial Motor Vehicle Facts 2007).

The concrete industry is well aware of the tremendous dangers that exist when their vehicles hit the road. After all, there's no such thing as a "minor incident" when a fully loaded mixer or dump truck is involved in a mishap.

Our clients in the concrete industry report that their top motor vehicle incidents based on frequency are:

1. Backing

2. Striking fixed objects
3. Side swipes
4. Rear end crashes
5. Intersection incidents

A closer look at intersection crashes.

While it is the goal of every safety conscious fleet operator to eliminate all traffic collisions, it is the incident types that cause more injury and result in higher claims costs that need to receive the most attention.

Incidents involving backing or fixed objects are frustrating but usually amount to minor property damage and rarely result in injuries. Side swipes are concerning but are usually a glancing blow that cause physical damage and rarely, bodily injury.

For this article, we chose to look more closely at intersection collisions because of the frequency of these incidents and because, typically, the consequences of this type of crash can be deadly.

For our purposes we considered an intersection as any place where two or more roadways crossed. Our data found that 57 percent of the intersection crashes had traffic lights. That's no surprise since traffic lights

are usually placed at the crossings where more vehicles travel and there is more density.

Don't leave it to a little piece of colored glass.

Traffic light violations played a significant role in these incidents. Fifty-two percent of the crashes involved one of the parties running a red light. Of these, 54% were the subject driver and 46% the other party.

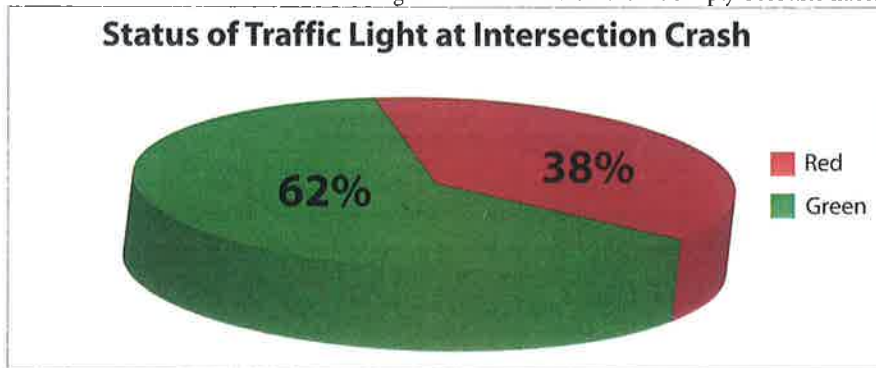
Delving deeper, 62% of the crashes at "lit" intersections occurred when the light

fundamental skill of checking the intersection (looking left-right-left) in advance, the

risk of an intersection crash can be dramatically reduced.

It Starts with Inattention

Every successful crossing of an intersection without first scanning reinforces the bad behavior until it simply becomes habit.



¹Based on National Safety Council definition of "preventable".

was green for our subject and 38% of the time the light was red.

The message is very clear: As 62% of the drivers (above) found out, a green light is no ticket to safety. That little piece of colored glass is no assurance that no harm will come.

Unfortunately, experience has unintentionally sent us a different message. Our DriveCam observations find that the vast majority of drivers roll through green light intersections without ever checking cross traffic ... and they almost always get away with it. Unfortunately, each successful crossing with no left-right-left check unconsciously reinforces this risky behavior. Incredibly, our studies found that in 73% of these crashes where the subject driver had the green light, they never took the fundamental step of scanning the intersection before entering.

Many of these green light crashes may have been prevented. Fifty percent of these green light incidents could have been reasonably avoided had the subject driver simply looked both ways prior to intersection entry. The looming problem coming from the side was visible had they just looked for it.

The lesson here is that we should never take the green light for granted. Someone will run that next red light ... we just don't know when they'll do it. By practicing the

This lack of attention to the sides didn't suddenly materialize at the intersection. More often than not, these drivers already had failed to demonstrate meaningful side to side awareness long before reaching the intersection. To support this, we took a look at driver mirror checks as an indicator of eye activity in the ten seconds before reaching the intersection.

Heavy equipment operators often refer to the mirrors as a "truck driver's best friend." But in reviewing these crashes the friendship had been abandoned. Almost 60% of

Mirror Checks	0	1	2	3	4	Unknown
Percent of intersection crashes	59%	15%	4%	2%	4%	

the drivers failed to glance to the mirrors even once.

Nationally recognized driver training programs, such as the Smith System and the National Safety Council's DDC course, emphasize that active, inquisitive eyes are essential to remaining accident free on our roadways. Our review of these crashes suggests too many drivers have not developed this important seeing skill.

"Inattention" is often cited as a factor in crashes. It's a logical default choice when

there is no real-time view of what happened. For example, an officer arrives on the scene and finds two vehicles ran into each despite good road and visibility conditions. Statements at the scene are often contradictory ... few drivers own up to their own mistakes. Often there is suspicion that a distraction may have been a factor. Perhaps a driver was on the cell phone or concentrating on a work task. Our review of intersection incidents, however, doesn't support this. We found distractions only played a small part in the lack of awareness in and around intersections. In fact, the subject driver was distracted by non-driving activities or other passengers in just 17% of these crashes.

We certainly are not suggesting it is safe to do other activities while driving. Rightfully, safety conscious commercial fleet operators have rules in place to restrict distractions while behind the wheel. There are numerous studies validating how driving skills diminish when drivers are distracted. One study, in fact, found that the relative risk of being in an accident while using a cell phone is similar to the hazard of driving with a blood alcohol level at the legal limit. The risk is real, it just may not occur as often as some believe.

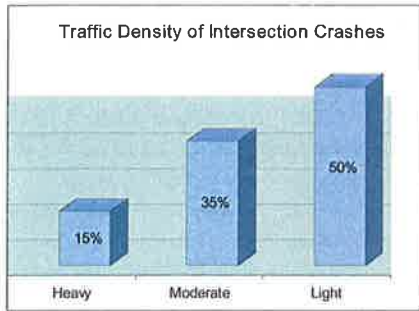
Traffic Density

It could be argued that drivers are more prone to dedicating all attention to the forward view when traffic is heavier. After all, distance to the lead vehicle may be compressed and therefore awareness straight ahead is crucial. However, our review found that most of these intersection crashes did not occur in heavy traffic. Limited by the

video viewing screen, we defined traffic conditions as follows:

- Light Traffic - no more than two vehicles ahead in the same direction in any frame
- Moderate traffic - three to six vehicles ahead in the same direction in any frame
- Heavy Traffic - seven or more vehicles ahead in the same direction in any frame

Only 15% of the incidents occurred in heavy traffic. The issue is human error, not



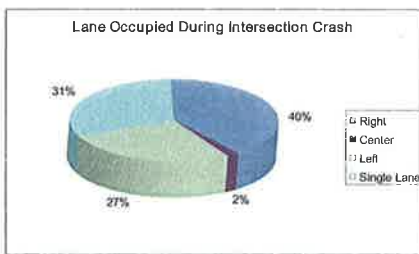
*Strayer, Drews & Couch, University of Utah 2006

sheer volume of traffic. Vehicles don't cause crashes. People and their behaviors do.

Lane position and intersection crashes

The relationship between lane selection and intersection crashes is interesting. Intersection incidents while in the left lane are about the same as crashes when there is only a single lane. However, right lane collisions are about 50% higher than the single lane or left lane collisions. That's surprising as in most cases the left lane has the first exposure to crossing traffic.

Instances where an intersection crash occurred while the subject vehicle is in a center



lane are very low, less than 2%. Some of this is due to the fact that only 13% of the roadways had three or more lanes, but the figure is still disproportionately low. It may be that a center lane's inherent additional lane of buffer on both sides from crossing traffic is enough to materially reduce risk exposure.

As stated earlier, a large number of these costly incidents could have been prevented had the driver exercised proper safe driving practices. Most likely, each driver involved in these incidents had already received substantial driver training. Despite this, poor driving habits still existed and contributed to the circumstances.

Root Causes

Although training provides the knowledge and sets the expectations, it doesn't necessarily change the behavior. For instance, do you actually see how your fleet drivers drive? Do you see the risks they take? Or, are they professional only during a ride-along situation? How sure are you that they follow the rules of your organization, not to mention the rules of the road?

It's important to consider these root causes when considering how safe your drivers really are. And, learn how you can know who is a risky driver and how you can prevent him or her from causing a potential incident.

Poor Awareness

Safe driving requires active, effective information gathering. Potential threats must be identified early to avoid the abrupt, late decisions that so often create problems in traffic. Poor awareness is often at the root of risky driving situations. Here are some common behaviors that affect driver awareness.

- Not Looking Far Enough Ahead
- Blank Stare (driver day dreaming)
- Not Scanning Roadway Broadly Enough
- Not Scanning Intersection
- Not Checking Mirrors Frequently
- Failing to Check Blind Area

Fundamentals

These categories involve the fundamentals of safe driving and go to the very root of many collisions. Drivers who continually exhibit poor fundamentals are "an accident waiting to happen" and are a liability to your organization, as well as a hazard to others on the road.

- Following Too Close
- Unsafe Speed For Conditions
- Traffic Violation
- Failure to Keep an Out (escape route)
- Poor Lane Selection
- Traveling Too Long In Other's Blind Area

Demeanor

Demeanor means "behavior toward others." Many studies have supported that driver attitude impacts safety.

- Poor Decision Making
- Aggressive
- Willful Misconduct (road rage)
- Drowsy or Fatigued Behind the Wheel

Risky Actions

Although these actions may not influence

the way someone drives, they are paramount to driver safety, particularly if an accident does occur.

- Driver Unbelted
- Passenger Unbelted

Distractions

Distractions are common while driving. A driver's attention may be divided between driving, navigating, talking to passengers and other activities. Distractions can cause accidents.

- Cell Phone
- Mapping/Navigation
- Food or Drink
- Passenger
- Other Work Task

Something amazing happens when a driver knows that his or her risky driving behavior will be measured and coached. What's even more amazing is what happens when a driver realizes that bad driving behavior actually matters before the crash happens. The result is a quick adjustment in their driving habits to avoid the consequence of a coach reviewing an audio-video clip of their actual driving behavior.

Coaching works. It can reduce the frequency of risky driving instances by 50% or more. In addition, it reduces the severity of the actual incidents by an even greater extent.

The risky behavior needs to be changed before driving risk can be significantly reduced. It takes quality training coupled with an effective driver monitoring strategy to identify and correct risky behaviors before they lead to a traffic collision. When you can predict it, you can prevent it. And that saves lives and dollars. ■

Del Lisk serves as vice president of safety services for DriveCam Inc. In this role, he is responsible for developing safety policy and procedures and overseeing training for DriveCam's fleet customers. His duties include administering the DriveCam Certification Program and directing the DriveCam Academy.

Prior to joining DriveCam, Mr. Lisk spent 21 years with Smith System Driver Improvement Institute, a leader in professional driver training. Most recently, he served six years as company president. While at Smith System, Mr. Lisk developed fleet safety programs and personally delivered training to more than 10,000 fleet drivers.

The views and opinions expressed in this article are those of the author and do not necessarily reflect the views and opinions of the National Ready Mixed Concrete Association.