



Risk Management Services

DEFENSIVE DRIVING: LEFT TURN SAFETY

Background

Left turns are dangerous and lead to ten times the number of crashes compared to right turns, according to a 2001 study from the National Highway Traffic Safety Association (NHTSA) of 1.72 million vehicle accidents. Philadelphia Insurance Companies (PHLY) conducted a review of the 50 largest left turn-related claims from 2013 - 2015 with the following results:

- 80% of accidents were due to a failure to yield
- Motorcycles were struck by a car turning left in six of the ten largest claims
- Other vehicles making left turns have caused large claims involving insured vehicles

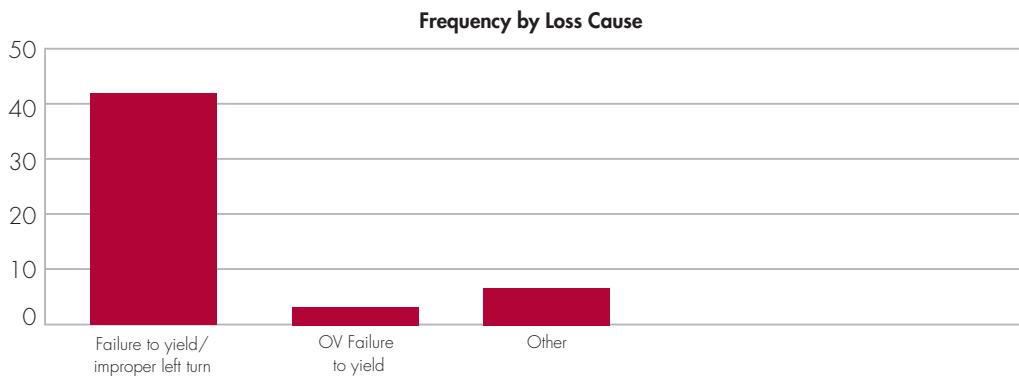


Figure 1- PHLY auto claims, left turn frequency

Logistics

There are three ways that a left turn can result in an intersection accident (Figure 2). Two involve crossing moving lanes of traffic while the third event consists of merging into a moving lane of traffic. The danger in left turns comes from the multiple decisions required in a short amount of time. The risk is reduced for right turns, where fewer decisions are required.

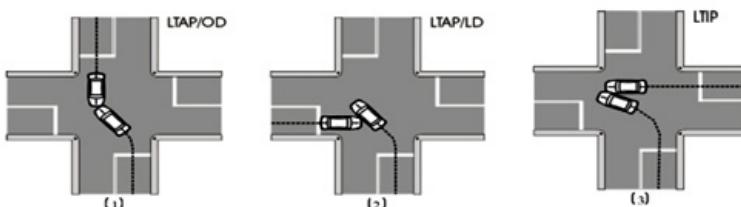


Figure 2- Diagrams of possible left turn accident scenarios

Driver error



A 2010 NHTSA study, "Crash Factors in Intersection-Related Crashes: An On-Scene Perspective," shows that driver recognition error and decision error account for 84.9% of all crashes at intersections, including left turn accidents. Looking into the recognition and decision details, the same NHTSA study determined the top three driver-attributed reasons for accidents involving left turns are 1) inadequate surveillance, 2) false assumption of others' actions and 3) turning with an obstructed view. "Inadequate surveillance" consists of failing to look before making a maneuver and looking but not seeing the hazard ahead. Making a left turn requires judgment and decision-making skills.

A few of them include:

- Recognition of other vehicles
- Determination of other vehicle speed
- Determination of gaps between vehicles
- Recognition of pedestrians present
- Determine if their line of sight is unobstructed (Is the whole picture visible?)

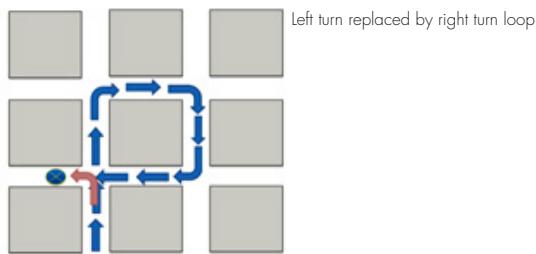
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Intersection safety tips

Philadelphia Insurance Companies strongly recommends to our insureds that drivers use the following safety tips and avoid making left turns to reduce the risk of left turn collisions.

- Avoid non-signaled left turn options and "permitted phase" (non-arrowed) lights
- Use right turn loops (see picture to the right) by pre-planning route
- Keep weather conditions in mind while driving
- Drive defensively and prepare for other vehicles turning out in front of you
- Be mindful of pedestrians' & bicyclists' actions



Tips for executing a safer left turn

While the goal is to limit left turns as much as possible, not all left turns are avoidable. When it is not feasible to substitute with three right turns, here are some tips for making a safer left turn.

- Use caution making left turns, taking into account speed and traffic conditions (look left, right and left again)
- The number of acceptable gaps decreases with heavy traffic; do not rush through small gaps
- With respect to motorcycles, use a greater sense of caution when judging gaps and consciously look for them
- Do not enter the intersection while waiting to make a left turn (stay behind the lane termination line)

UPS success story

Safety is the main concern for left turns, but UPS has found that changing delivery workers' driving patterns to make only right turns in urban areas also saves fuel and reduces UPS' CO2 footprint. By making right turns, UPS avoids idling at intersections, waiting to complete a left turn. As of 2012, UPS had reportedly saved ten million gallons of gas with this strategy. By making a series of right turns to achieve the same outcome as a left turn, they have reduced the amount of time it takes to complete routes, even though the mileage may have increased. UPS has found that limiting a driver's left turns reduces fuel consumption, emissions, and crashes on the roads.

Summary

Left turns are one of the most dangerous aspects of driving on the road today. NHTSA and Philadelphia Insurance Companies' data shows that in crossing path and intersection-related accidents, left turns are the most common cause of a crash, and they lead to the largest costs. Organizations should work to limit left turns and train their drivers on the importance of making safer left turns and reducing them when possible.

Sources

United States of America. Department of Transportation. National Highway Traffic Safety Administration. Crash Factors in Intersection-Related Crashes: An On-Scene Perspective. N.p.: n.p., n.d. Print.

United States of America. Department of Transportation. National Highway Traffic Safety Administration. Analysis of Crossing Path Crashes. N.p.: n.p., n.d. Print.

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