

Roof Pillars Can Be A Visibility Obstruction

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As Reconstructionists we like to simplify things to a set of analyses that suggest a complete understanding of an event when in fact reality is quite a bit more complicated.

Take the circumstance where a driver says he/she did not see another vehicle at an intersection where the line of sight appears to be clear. Many analysts have stated in their reports that it is obvious that the person was mistaken or simply lying, since the position of one vehicle with respect to another clearly showed the driver should have seen the other vehicle. None of these analyses have ever considered that the line of sight between two vehicles approaching from different roadways at an intersection is not just blocked by objects in the exterior environment, they are also blocked by the roof pillars of the vehicle where the driver is sitting.

Consider our recent analysis with a 1999 Chevrolet Lumina. We placed this vehicle at the edge of large soccer field. We set out two cones extending 22.2 and 44.4 metres respectively from the front end of the vehicle. If the vehicle was travelling 80 km/h (50 mph) it would travel 22.2 metres in one second and 44.4 metres in two seconds, so this was the logic for the cones. Next, we measured at 90 degrees to the left from each cone and placed several cones, 2 metres apart, in lines. One line of cones was 22.2 metres from the vehicle and the other line was 44.4 metres from the vehicle. So, sitting in the driver's seat and looking toward the left roof pillar, an investigator could assess the extent of obstruction to visibility by examining which cones in the each line could not be seen. The results? Well quite interesting.

At the line of cones representing one second before impact (22.2 metres), the line of sight was blocked between 12.25 and 16 metres. At the line of cones representing two seconds before impact (44.4 metres) the line of sight was blocked between 22.25 and 29.5 metres.

So what does this mean? Well suppose you are travelling along a straight and level highway with clear visibility at 80 km/h (50 mph) toward an intersection with another road. An object such as a car is on that road travelling at 50 km/h (30 mph) toward the same intersection. At the very instant that you are two seconds from reaching the intersection the other vehicle is about 27 metres away from the intersection and therefore it will reach the intersection at the same time as you. But being a careful driver you take a quick glance to your left at this point and observe there is no other traffic. You go through the intersection and kill the other driver. The noble analysts come out and decide you were negligent because you should have seen the other vehicle.

But at the time that you looked the other vehicle was behind your left A-pillar and our analysis shows that a length of about 7.25 metres along the opposing roadway is

blocked by that A-pillar. Now, an average passenger car is about 4.7 metres long. So it is quite possible for that opposing vehicle to be totally blocked from view by your A-pillar. And circumstances could be that this blockage could exist for a substantial distance leading up to impact, if the right combination of vehicle speeds exists. But did anyone do that analysis? Well, likely not. I hope you enjoy prison grey.

Although this is one example it illustrates the complexity of real-life events. As an analyst failure to consider this possibility is not governed by how much formal training you've obtained or how intelligent you might be. No engineering school or reconstruction school has ever told its students: "Go and consider roof pillars in motor vehicle accidents at intersections". There are just too many unique circumstances in these events to cover all angles. It is however often dependent on the type of questions the analyst asks him/herself or is capable of asking. It is rarely the issue whether someone can find a right answer, in a school setting as that capability is constantly tested by giving the student all the relevant facts in a vacuum. Instead the issue is whether someone is capable of posing the right questions and determining what the relevant facts should be in composing the answer.