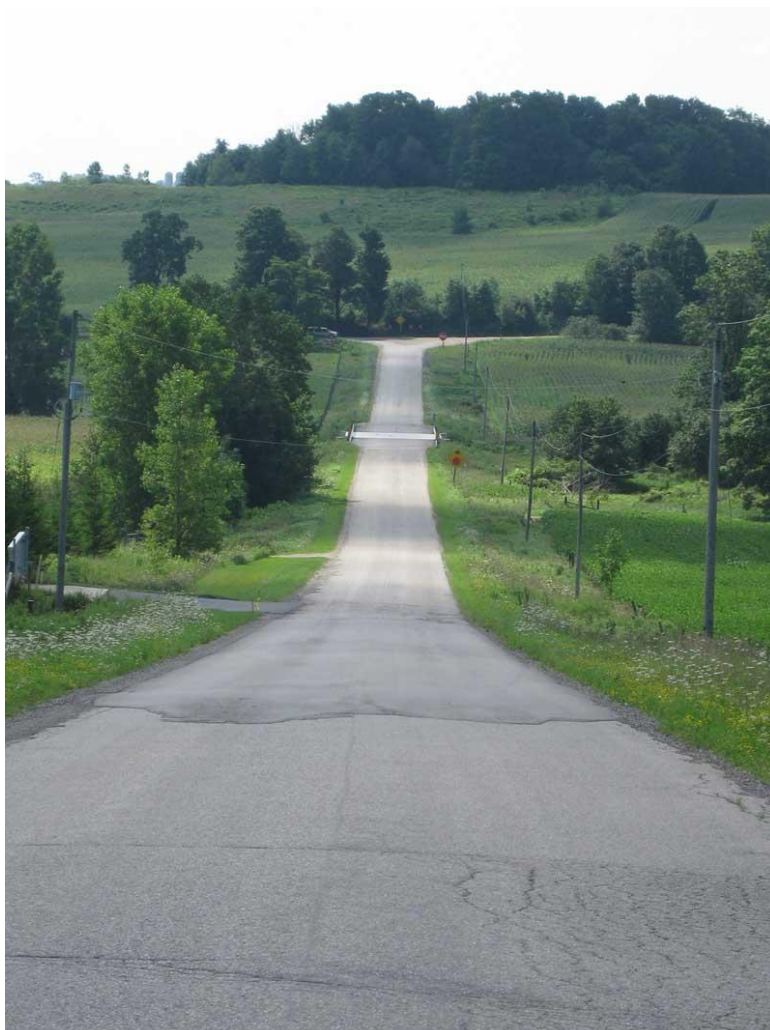


Fatal Pick-up Truck Collision on Perth County Rd 112 on July 29, 2010 - Was Visibility A Factor?

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It was reported that this morning, shortly after midnight, a pick-up truck collided with a tree and earth embankment at the intersection of Perth County Road 112 and Perth-Oxford Road, just south of Harmony, Ontario. The Pick-up truck had been travelling southbound on County Road 112 where the road terminated at a T-intersection with Perth-Oxford Road. The vehicle did not stop at the T-intersection but travelled, at highway speed, through the intersection and collided with a tree and earth embankment. The vehicle then caught fire. A 40-year-old male driver was reportedly fatally injured as a result of this collision. Here are several views looking southbound on Perth County Road 112 leading up to the area of impact at the T-Intersection. First we present a long distance view:



You can see how the vehicle travelled along a down-slope of the road and crashed at the T-intersection in the background. Next we present an intermediate-distance view which is closer to the intersection:



You should now be able to see the Checkered warning sign and yellow Chevron signs indicating the termination of the road.

Now we present a closer, southbound view of the intersection.



You should be able to note two trees located to the left (east) of the signs and this is where the vehicle came to rest and became engulfed in flames. The tree closest to the signage is the one that the Pick-up truck struck before it rotated to a position between the two trees. Looking at this last photo you should recognize that the truck did not simply travel straight down the road to impact but that it moved to the left (east) by several metres as it approached the impact. This would suggest that the driver attempted to steer to the left before impact.

Below is a southbound view showing the signage and the struck tree located just to the left (east) of the signs. Further to left (east) you should recognize the blackened area where the vehicle burned.



The extent of damage to the struck tree is evident from the amount of bark that has been removed and from the amount of scarring to the wood beneath it. Even without seeing the vehicle this evidence would tell us that the impact was at highway speed. One would tend to question at this point why such a high speed impact would occur when the site photos would suggest that the signage was quite visible.

We have to be careful about making such judgments. Remember, these photos are taken on a sunny afternoon, not just after midnight. Just because the signs are visible in daytime does not mean they were visible at night. That would seem to be a peculiar statement given the reflective condition of such signs, but we must be careful about such judgments. Sign position and headlight aim must be evaluated before drawing conclusions. Remember that this site contains a pre-crash vertical alignment such that the headlight aim may not be directly toward the signs. The headlight aim could be above or below the position of the signs and this needs to be evaluated at night.

An investigator should make note of the height of warning signs with respect to the

nearby roadway. The photo below shows a measurement tape being placed at the sign to note how high it is relative to the ground around it.



Below is a closer view of the tape showing a height of 163 centimetres to the bottom of the sign.



Obviously this measurement is not sufficient because we still do not know the actual vertical position of the sign with respect to the aim of the vehicle's headlight as the vehicle is approaching the sign. Total Station data should reveal this but a photo like the one above helps to explain matters that might come up at a trial. An investigator might attend the site at night and place a vehicle at several locations along the road with its headlights on, preferably on high beam. The investigator could then use two procedures involving reading from a light meter. First he could stand at the position of the vehicle and take spot-meter readings. Spot readings are ones that measure the amount of reflected light coming back to the observer. Measurements can be taken of the sign but also of the background to consider the difference in contrast. A second procedure might involve the investigator standing in the vicinity of the signs and taking illumination readings. Readings of illumination would tell the investigator how much light is reaching the area at the signs. Light readings should be taken at differing heights because the amount of light thrown onto an area will differ such that the headlights might provide sufficient illumination of the ground just below the sign but not the sign itself.

I also want to demonstrate that collisions such as these can provide some helpful clues as to whether the lights of a vehicle were on or off at the time of impact. Investigators are aware of the condition of "hot shock" that causes the filament of a light bulb to stretch from its tightly wound condition into something that resembles spaghetti. When such deformation occurs it indicates that the filament was hot at the time of impact and therefore that the light must have been on. The trick is to find the tiny filament in such an area of destruction.

I simply say that a collision resulting in a final rest position that is very close to its area of impact will be beneficial in helping you to locate the filament that you seek. Let us look at the photo below which shows the base of the struck tree. Often parts of a vehicle can become embedded in the struck material and by making close observations you can identify what it is that has been imbedded.

Look closely below and see if you can find the metal reflector from a headlight that is imbedded in the embankment.



If you cannot find it then below is a closer view:



Once you see that this reflector is imbedded in this location then you know that other parts of the headlight must be somewhere nearby. It is apparent that the police investigators in this case did not look closely enough because they did not find the helpful evidence. Slightly higher and to the right of the reflector we can see the housing of the filament imbedded in the earth as shown below:



It is simply a matter of recognizing what it is that you are looking at.

I pulled this housing out of its imbedded location and we can see it below.



You should be able to see the coils of the filament.

Below is another view.



Now for all you budding CSI experts, tell me what you see. Are the filaments stretched indicating hot shock (headlight was on) or are the filaments perfectly wound in their pre-crash condition? Send me your opinion.

I'm simply presenting you with methods and procedures to follow when encountering such a case. Note how important it is to recognize what you are looking at. If you encountered such an investigation for the first time you would simply not consider that

such a small piece of evidence could exist and you would not even bother to look for it. Even if you looked you would not recognize what it is that you are supposed to be looking for. So it is simply an issue of becoming familiar with the examination for such events so that you become familiar with the evidence that typically occurs.