Tree Impact On Ferguson Line On April 3rd, 2011 Leads to Critical Injuries

It was reported that an eastbound vehicle on Ferguson Line, Elgin County struck a tree just west of Highbury Avenue. The 33-year-old unidentified, female St. Thomas resident was reportedly in critical condition. I examined the site this afternoon with the following photos.

First, the photo below was taken from a distance of 150 metres west of the point of impact with the tree.

The collision reportedly occurred at about 1830 hours. It had been snowing yesterday evening therefore the roadway could have been slippery. You can see how an eastbound vehicle enters a downgrade slope just before the area of impact. Also you should note the row of tall evergreens on the south roadside. Dense trees on a south roadside means that the sun is not able to penetrate the road surface meaning that the snow or ice may have melted along portions of the road exposed to the sun but near this location the sun may have been blocked resulting in slippery/icy conditions.

Next is a view from 100 metres west of the point of impact. You should be able to see my black Regal parked on the south roadside and just beyond that you will see the impact with a couple of fir trees. As usual the small orange cones are spaced 25 metres apart such that the last cone is adjacent to the trees where the impact occurred.

As you can see the roadway surface is wet and we would not be able to locate any loss-of-control yaw marks. Note however how the water is collecting is certain areas of the right portion of the eastbound lane. The lane was generally in good condition however.

Next is a view from 50 metres west of the area of impact. Now you should be able to see the group of evergreens on the south roadside just past the parked position of my car. This is where the vehicle slid off the road surface and travelled into the trees.

Again, the road surface itself does not appear to be in bad condition.

Next is a view from about 25 metres west of the area of impact. Now you should be able to see the tire marks in the wet soil on the south roadside, just past the driveway.

Next, we see a view through the south roadside and the tire-marks leading up to the impact with the trees.

If many of you have been examining my other articles where vehicles slide sideways into impact with a tree or pole you should be able to recognize how the vehicle slid into this impact. You should certainly see three tire marks while the fourth might be more difficult to decipher. Now, two marks close together suggest they are either the two front or the two rear tires. Let me expedite things - the two marks on the right are from the two front tires. We don't see any tire marks crossing so we know that the crossing look place somewhere on the road. The only thing remaining is to decide whether the vehicle is almost at 90 degrees as it hits the trees or is it just slightly more than 90 degrees. I think we can already agree that the vehicle is coming into impact with it driver's side right?

OK, I have not studied this in great detail at this time but I can say that in the majority of cases, vehicles striking something this close to the road edge have not made it beyond a 90 degree angle, so I would suggest that the vehicle is probably at a 70 or 80 degree angle, leading somewhat with its left front corner as it comes into impact.

Now let us look at the two culprit trees that caused the damage, as noted in the photo below.

There is not much bark missing on the trees and that is sometimes a general sign of the severity of impact. Also the collision severity can be estimated by noting the angle at which the vehicle left the roadway. It was a fairly steep angle suggesting the vehicle was not "booming it" down the road. But it was an unlucky situation that too often occurs that the tree impact is right at the point where the driver is seated.

I can tell you of instances where people examine tremendous penetration of trees and poles into the sides of vehicles and people comment about how "miraculously" these occupants survive. So people say, but there's nothing so miraculous about it. Injury causation in these collisions is very sensitive to the precise location of the pole or tree relative to the direction that the occupant's body is travelling. If you are unlucky then your travel direction is directly toward the tree, but if you are lucky your travel direction is just 6 inches in front of or 6 inches behind the tree - that is just the way it is - 6 inches is often the difference between minor injury and death, and I am not exaggerating.

Now the photo below is of the damage evidence to the south tree. This is the one that was likely struck by the front bumper or fender area of the vehicle. You can see some fresh damage, but do you see anything else? Look a little closer at that damage.

To make it easier, let me show you a closer view of that damage below.

Can you recognize it yet?

Time is up. What you should see in the photo above is that there is old damage of the tree likely from a previous impact. Hmmm, that is interesting. But I looked at all the other trees in this clump of evergreens and no other tree has this impact damage. So this is the second time this tree has been struck by an eastbound vehicle that went out of control coming over the slight downgrade. Now this particular tree did not do all the injury damage, it just helped to slow the vehicle down. The tree that caused the injuries was likely the north tree as shown below.

Now this north tree does not show much evidence of damage. It is likely to survive to be a danger to future drivers. You can see some bark is missing near the base but otherwise you might not notice the markings and transfers imbedded in its bark. One thing I like to do is to place a tape measure against a tree or pole so that I can document the height of any impact damage or transfers. So below is the same tree with a tape measure attached.

Now let's look at some close-up views of the tree to determine what we see there. First a view near the base of the tree.

Nothing too dramatic here since the lower cowl of the vehicle would have contacted this area. But let's look further up.

Now I have no idea what kind of vehicle struck this tree. I could have looked more closely at the debris and I would have found out but I did not. But generally, the top edge of a passenger car door, just at the bottom of the side window is about 90 centimetres above the ground. You can examine the 90 centimetre point on the tape measure and see what you find. I can see a variety of paint chips clinging to the bark and higher up I can see the tempered glass fragments likely from the side windows of the vehicle.

A driver's head is often in the range of 120 centimetres above the road surface. As gruesome as this may sound it is often possible to locate head impacts in the surface of trees, poles as well as the front hood edges of pick-up trucks and vans, as well as in the grille areas of large trucks whenever there has been a side impact with a tall object. This is what side airbags have been developed to prevent. So I would ordinarily be looking in the area of 120 centimetres for evidence of a head impact. Let us look a little higher.

Now we are looking in the vicinity of 120 to 150 centimetres above the ground. I apologize for the bloody finger at the bottom of this view but even I get caught by surprise sometimes when I poke my finger into tempered glass fragments. You can see some of that tempered glass in the crevice of the bark at about 135 centimetres. I did not study the markings in any great detail but I did not observe any indication of a head impact to this tree.

Certainly we can go even higher, as shown in the photo below and note that we have more paint fragments clinging to the tree in the range of 150 to 170 centimetres. This is often from the roof of a vehicle. I know that light trucks and vans can reach these heights but my experience is that when the roof of a car is crushed in a side impact its height is raised from the normal height of about 145 centimetres such that a height of 170 centimetres for a passenger car impact is not unusual.

I want to show you one additional thing before closing off of this case. A utility pole has been freshly replaced just east of the collision area as shown in the photo below.

The view above is looking westward on the south roadside and the area of impact is in the background. You can see that the utility pole in the foreground has been recently replaced because of the fresh digging of the earth around it. Being of a suspicious mind set I am thinking that this could relate to another collision on this south roadside. So there could be three impacts at this location. It leads back to thinking about the effects of that stand of evergreens on the south side of the road and how the road surface would remain frozen while other areas along the road might be melted by the sun. It is more important that this frozen zone could be located in the vicinity of this down slope and you might have noticed the slight deterioration of the south edge of the eastbound lane. All these minor things add up and one would not think to put it all together. Just something to think about next time your are cruising along on a sunny March day when the temperature has been close to the melting point. Look out for clumps of trees on the south side of east/west roadways because sometimes you may not know what hit you.