Viper Rollover On Hwy 402 Results in Fatal Injuries to Driver

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It was reported that on Saturday morning, November 20th, 2010 Kenneth Frederickson of Glencoe, Ontario was fatally injured as a result of a rollover of his Dodge Viper as he travelled westbound on Highway 402 just west of London, Ontario. Police reported that Frederickson was ejected from his vehicle during the crash. Witnesses were reported to say that the vehicle was not travelling at a high speed before the crash. I examined the site on November 22nd and can report the following.

The delay of more than 24 hours before examining the site made it more likely that I would not be able to see the most important and fragile evidence which is located at the beginning of any loss-of-control event. Unfortunately I was tied up with other matters and so the following photos are the best that could be accomplished.

The view below is taken looking westbound from the north shoulder of Highway 402.

The small cones that I placed in the arced fashion is an attempt to delineate a set of tire marks that I felt could be related to the collision. There are a set of more-prominent tire marks on the shoulder in the distant background where the Viper's path off the road is quite clear. But here in the foreground it would appear that a vehicle may have rotated

counter-clockwise on the shoulder and then the driver over-corrected causing the vehicle to rotate clock-wise partially back onto the road and then off the road. You can see in the above photo that I have laid down a carpenter's level and my usual technique of placing a tape measure to document the slope shoulder. A close-up view of the measurement is shown in the photo below.

This The slope was about 11.5 % which is well beyond the typical value of 4 to 6%. One must consider however that this is a high speed highway and we are in a right curve so the designers of the road would be placing a higher cross-slope in the road to allow vehicles to pass through the curve with greater ease. Yet, while searching for this site I travelled onto the shoulder several times and observed that even at 60 km/h I was in jeopardy of losing directional control. Something to think about when you are on one of these highways and decide to pull over.

The actual tire marks that show the Viper travelling off the road are shown in the photo below.

The closest cone was placed off-set to the north from the beginning of the tire mark caused by the right front tire because if I placed the cone at the asphalt edge it would be blown away by the wind gusts caused by passing trucks.

The second cone indicates the crossing point between the left front and right rear tires and such evidence is pretty standard in loss-of-control collisions. Notating where this

crossing point exists enables the investigator to compare this collision to many others since this crossing point is approximately where the vehicle's pointing angle is about 30 degrees to the right of its travel path. Think of a vehicle's beginning to rotate out of control and picture, as it rotates clock-wise, how the path of the right rear tire eventually crosses over the path of the left front tire - this is the crossing point that I am showing in the above photo.

That crossing point may be a little more clear in the photo below as we see the cone in the foreground placed at that crossing point.

The two cones in the background are just there to warn drivers that my car is present on the shoulder and they do not reference any collision evidence. The position of my car is adjacent to the final rest position of the Viper which ended up against a small embankment near the fence line in the background.

The photo below shows the location where the Viper travelled through the ditch and the contact of its under-carriage caused it to be vaulted in the air for a distance about 28 metres. Upon landing it then travelled an additional distance of 33 metres to where it came to rest.

From an investigative viewpoint it is useful to take several distances to enable the comparison of this collision to others. For example, we might want to know the distance from when the vehicle made its last exit from the road to where it came to rest. This distance was about 114 metres. We might also want to know what distance it travelled laterally from the north asphalt edge to its rest position. That lateral (northward) distance was 20.8 metres.

From these distances of 114 metres along the road and 20.8 metres perpendicular to the road we have a general angle of travel of about 10 degrees. Similar measurements on the north shoulder, where the vehicle initially left the roadway, led to a calculated departure angle of about 8.5 degrees. This is fairly typical that the initial departure angle will be shallower than the travel angle of the vehicle further in its path toward final rest. The 8.5 degrees tells us that the driver of this vehicle likely did not fall asleep as a departure angle in the range of 1 to 4 degrees would be expected from such a cause. This is how we use travel distances and angles to compare one loss-of-control event to another.

As a final note, the Viper contains a five-point harness and a very enclosed area around the driver's seat that would make it difficult for someone wearing a seat-belt to become ejected. However, due to the unusual seat-belt system the possibility that the system became disengaged during the rollover should be something that the investigators should be examining.