Clarke Road - Five Years of Independent Research into Loss-of-Control Events

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This fall marks the end of a five year period of our continual examinations and testing at the Gorski Consulting "Laboratory", more commonly known as the "S" curve on Clarke Road, in north-eastern London, Ontario.

It was about this time in 2009 that we decided to conduct some formal testing on the Scurve on Clarke Road, just north of Fanshawe Park Road. We had observed that the curve was challenging in that it contained an undesirable combination of horizontal and vertical curves. We observed that this resulted in a number of loss-of-control events and it gave us an opportunity to attempt to capture those events through the set-up of multiple video cameras. Several such videotaping sessions were completed over the last five years and we gained some useful insight into how vehicles stray out of their travel lanes, their speeds, and other similar data.

In these last five years we have maintained a regular inspection of the S-curve for evidence of loss-of-control events. Figures 1 through 3 show an example of loss-of-control event that did not result in a collision however it commenced when the vehicle entered the east gravel shoulder and crossed into the west roadside.



Figure 1: View of loss-of-control tire marks from a northbound vehicle and its rest position from an incident on August 5, 2014.



Figure 2: View, looking south from the west shoulder of the S-curve showing the rest position of the loss-of-control vehicle in the foreground and the yaw marks on the road surface.



Figure 3: View of black yaw marks on the roadway centre-line suggesting the loss-of-control event occurred when the road surface was wet.

This event was most certainly not documented in any official records, such a police report. This fact is clear when we take a close examination of the tire marks at the vehicle's rest position, as shown in Figures 4 and 5.



Figure 4: View at the final rest position of the vehicle showing the loss-of control tire marks and those produced subsequently as the vehicle left the site under its own power.



Figure 5: Close-up view of tire marks at rest position, showing the mark produced during loss-of-control and the mark produced afterwards when the vehicle left the site.

Experience in the interpretation of tire marks on gravel can clearly separate the loss-ofcontrol tire marks from the subsequent marks produced by the vehicle as it left the site, under its own power, after sliding to a stop on the roadside. The reason why this event did not result in a collision has nothing to do with the severity of the event or its potential consequences. It just so happened that, as the vehicle slid across the road, there was no other vehicle travelling in the opposing lane. If the vehicle had been occupied by four persons and was struck by a large truck the results could easily have produced multiple fatalities. Therefore the suggestion that this event is unimportant or unworthy of official documentation must be false. There are many incidents like these that have occurred during the five year period of our study.

Figure 1 contains a summary of locations along the S-curve where loss-of-control events and collisions were documented from April, 2009 through to the end of 2012, categorized by year.



If we increase the 2009 data to 12 to account for the fact that we only have information for 3/4 of the year in 2009, then would have four years of data with an average of 14.75 events occurring each year.

Our latest data shows that in 2013 there were 10 events documented and so far in 2014 there were only 4 events up through to the middle of September. While these numbers are small it might suggest an overall downward trend for these occurrences. This is interesting because of the advent of electronic stability control (ESC) being installed on newer vehicles. As indicated on the Transport Canada website:

"Transport Canada has introduced the new Canada Motor Vehicle Safety Standard 126 that requires an ESC system on all passenger cars, multi-purpose vehicles, trucks and buses with a Gross Vehicle Weight Rating of 4536 kg or less, and manufactured on or after September 1st, 2011."

As time passes it is expected that the population of vehicles with ESC should increase and we should see its effect in the numbers of loss-of-control events. Therefore it would be expected that our data on the S-curve should reflect that. Even more interesting will be the types of loss-of-control events that remain, even when ESC is available. Therefore our data should prove interesting for the future.

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