

Dr. Kelly Shaughnessy of Ingersoll Reportedly Fatally Injured in Head-On Collision

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It is being reported that a popular local physician, Dr. Kelly Shaughnessy, was killed in a head-on collision on Saturday, October 30th, 2010 at approximately 2200 hours. It is reported that his 2004 Honda SUV "drifted into an oncoming lane and struck a pick-up truck head-on" (London Free Press). Further, a 52-year-old male passenger of the 2001 Dodge Pick-up truck was also fatally injured while the 31-year-old driver of the Pick-up truck sustained non-life threatening injuries.

Let us consider the facts and probabilities. Severe, head-on collisions that occur on rural highways like these, where there is no reported loss of control of the vehicle, will typically involve direct contact to 50% or less of the left (driver's side) portion of the front end of each vehicle. This causes major crush on the left portions of the front ends and the maximum crush is at the very left end of each bumper. Such collisions cause major intrusion of the left front structure into the driver's space and therefore fatal injuries occur. It is uncommon for a driver involved in such a collision to escape with non-life threatening injuries while the passenger sustained fatal injuries. Particularly in this day and age of multiple air bags and advanced seat belt systems. When the word "drifted" is used it does not give one the impression that the Honda was in the wrong lane for any long length of time which would be required if the frontal impact was to the right portions of the front ends. So What happened? Journalistic creativity? I'm tied up for the moment but I may go out and examine the collision site in the next day or two to evaluate this for myself.

UPDATE: November 4, 2010

My apologies to those who have visited this website with the expectation that I would have examined the collision site of this unfortunate event by now. I have been tied up with reconstruction matters that I am committed to completing as part of my business. I do intend to examine this site shortly.

UPDATE: November 4, 2010, 1450 Hours

I have now had a chance to attend the site this afternoon and in the following days I will be adding photos and comments about what I found.

First I want to show you a photo of Oxford County Road #55 from several hundred metres east of the accident site, and looking west or the direction that Dr. Shaughnessy was travelling.



The photo was taken while standing in Brant County and the border with Oxford County is at the intersection in front of us, which is at the hamlet of Muir. You can see that on the Brant County side of County Rd #55 the road surface is a little aged but as we approach the intersection at the border with Oxford County the roadway has been freshly paved. You will also note that the roadway is straight and level but the centre-line marking indicates that passing by westbound vehicles is not allowed. Obviously because we are approaching an intersection but also because there is a right curve at that intersection. The layout of the upcoming road is evidenced by the yellow warning sign on the right roadside in the photo below.



As we get closer to the intersection in the photo below you start to see how the roadway widens out to accommodate turning vehicles. In particular you should be able to recognize the small, red-bricked building on the right that looks like an old church. You should also now begin to see the newly paved surface of the road.



A resident indicated that the road construction was performed this past summer and it was completed only about one month ago.

Below is a photo taken from the south side of the road looking toward the intersection and you should be able to recognize that there is a right curve immediately beyond this intersection. You will find in additional photos that Dr. Shaughnessy's Honda SUV travelled onto the south or left shoulder before impact and the evidence of that will be just past this intersection.



Now, below is a view of the intersection but from a more northerly position where we can see along the westbound lane.



What I am trying to demonstrate with the previous two photos is that the intersection is fairly wide. You can see additional lanes have been included for vehicles turning off the main road. And there, to the right, is that red-bricked church.

I can state that a local resident stopped with her vehicle and wondered if I was there in some kind of official capacity. As I told her I was merely an independent researcher she began to elaborate about the number of fatal collisions that have recently occurred at this intersection (three in the past two to three years) and that there was a line of sight problem caused by the presence of the red-bricked church and curve. One would think this would have nothing to do with Dr. Shaughnessy's collision since his line of sight should have nothing to do with someone else's on the cross road. But let us take a look.

Below is a photo taken from the east side of the intersection looking west but standing at the north-east quadrant. What I want you to consider is the painted traffic stop bar that is in the middle of the view. This stop bar is where southbound vehicles on the minor road (governed by the stop sign) are supposed to stop the front end of their vehicles to scan the main road and determine whether it is safe to cross.



I took the above photo from a distance so that you could get an idea of the layout before I bring the camera to the eye position of a southbound driver. That eye position is shown below.



Now for some background for why I'm showing this. Roadway Geometric Design Standards are fairly similar throughout North America and they help to provide a consistent application of roadway layout so that drivers are given a certain amount of vision into critical areas of the road so they can avoid being struck. At an intersection, where a driver faces a stop sign, there is a certain amount of distance that the driver must be able to see along the main road so a decision can be made whether it is safe to commence a crossing. The standard basically gives the driver a time of two seconds to scan the opposing roadway and then, using a reasonable rate of acceleration, a certain time is allowed for the crossing vehicle to travel from the stop bar all the way across the road up to a point where the rear end of the crossing vehicle passes the far edge of the travelled portion of the intersecting road. So basically the crossing vehicle is given enough time to fully cross without being struck. How is this done? Well, the roadway designer observes the average speed of vehicles on the main road and this "Operating Speed" becomes the bench mark. If the average speed is 90 km/h then the vehicle is travelling 25 metres every second. And if the crossing vehicle requires 7 seconds to safely cross the road then there must be sufficient visibility such that the vehicle on the main road is visible for at least 7 seconds at the Operating Speed. So we multiply 7 seconds by 25 metres per second and arrive at a distance of 175 metres. So the vehicle on the main road must be visible for a distance of 175 metres from the point where the crossing driver is stopped, or else the roadway condition is in violation of the standard.

Frankly, I don't need to take any measurements or observations here. Clearly if you look at the above photo you can judge for yourself that there is not much visibility here. And

we simply consider that the widened intersection means that the vehicle on the side road needs to travel further than usual to clear the intersection. But there is more.

When a driver has to look at an oncoming vehicle travelling on a curve it is more difficult for the observing driver to recognize the approaching vehicle's speed and location, so more time is needed for the driver to consider what is safe. So I think we have a problem here.

Is this related to Dr. Shaughnessy's collision? I have no idea. Could it be related to Dr. Shaughnessy's collision? Yes? How? Well, consider the southbound driver who cannot see past the church, the driver pulls out further than the stop bar and keeps looking to the right because that is where the problem is, without recognizing that a westbound vehicle is approaching. And Dr. Shaughnessy's is the westbound vehicle. The southbound driver pulls out, the Doctor steers left to avoid and ends up travelling onto the south shoulder at a critical point when the roadway veers hard to the right. Since the shoulder has been freshly graded due to recent construction, it is soft and makes it more difficult for Dr. Shaughnessy to maintain control of his vehicle. By the time he is able to bring the vehicle back toward the paved road it is too late, an eastbound vehicle has reached the location and a collision occurs in the eastbound lane. Dr. Shaughnessy is found at fault unless someone does some digging.

I have not seen the vehicles nor have I spoken to any police investigator, nor have I spoken to any drivers or witnesses (except those residents I mentioned) so the actual facts could be quite different. But this is supposed to be an educational exercise where we try to understand possibilities, what evidence to look for, and what dangers drivers should be avoiding. Let me go on with the photos.

Before I put the visibility issue to rest I want to show you just one more photo (below) of a southbound driver stopped near the stop bar and how he has to creep out past the stop bar to be able to see past the church.



He also has to crank his head somewhat behind him to see because of the curve. I saw several drivers creeping out into the intersection well past the stop bar while focusing on what is to the right because that is where the visibility obstruction is located, but paying less attention to the left for approaching westbound vehicles. So when a collision occurs with a westbound vehicle the official agencies say "well there was no visibility problem because the westbound vehicle could have been seen from a mile away". Things are sometimes more complicated.

I now want to show you the layout just past (west) of the intersection. The photo below is taken looking west from the south side of County Road 55.



In the background, on the north (right) shoulder you can see my black car which is parked near the area of impact. Dr. Shaughnessy's Honda travelled onto the south shoulder somewhere near this location and then was coming back onto the paved road when the collision occurred. One can appreciate that collisions can occur for a number of reasons but the travel onto this shoulder just past the intersection makes one wonder if the event was related to the intersection. I will put it to rest.

Below is a photo closer to the area of impact and I want you to recognize that the gravel is soft due to the new construction. Again, more difficult to get through at highway speed.



If we were the first police officers to arrive at the accident site we would want to protect this shoulder because it would contain the tire marks of Dr. Shaughnessy's vehicle and it would help to clarify how the collision occurred. Since I am examining the site some 5 or 6 days after the event any tire-marks in the shoulder are long gone. In fact, they are often long gone before any official investigation can be carried out because persons responding the emergency place their vehicles on the shoulder and destroy the evidence. I have heard police reconstructionists refer to the fire rescue people as the "evidence eradication team". Only kidding of course but it high-lights the point that people at an accident scene are there for different reasons and some interfere with the work of others. Towing personnel are a real difficulty for post-accident, civil reconstructionists because of the confusing evidence that they can deposit, sometimes directly over top of the accident evidence. There is an example of this at this site and if I have time I will describe it.

Now as we start to get close to the area of impact you can look at the photo below and try to locate the "yaw" tire mark near the asphalt edge as it exits the gravel shoulder and enters onto the paved roadway.



This is the pre-impact tire mark caused by Dr. Shaughnessy's Honda. And if we were here shortly after the event we would have seen the mark on the gravel shoulder as well. If you cannot see the yaw mark in the above photo then you should certainly see it in the photo below.



The striations in the mark are very visible when the tire mark crosses the white line. The tire mark ends at the point of impact in the background. Note that the angle of the striations within the yaw mark can tell the investigator whether there was acceleration or braking taking place while the mark was being created. For example the striations of most yaw marks are at a significant diagonal to the length of the mark while the striations in the present mark run almost perpendicular to the length of the mark. I will not comment further than that at this time.

In the photo below you should be able to follow the yaw mark to the point where it ends and that is where the impact occurred.



In my opening remarks I mentioned my review of the news article and I discussed probabilities and how head-on collisions typically occur. I indicated a large majority of head-on collisions occur with about 50% or less of over-lap of the left portions of the front ends. Well the scenario here is quite different. I discussed how unusual it would be for the driver of the Dodge Pick-up to have survived with minimal injury unless the impact was to the right portions of the front ends. I also stated that for right-to-right contact the Honda would have to be in the opposing lane for a substantial time and distance. Well I was right to a degree except that the Honda was "even more" to the left (wrong) side of the road than I stated. It had gone off the travelled portion of the road and was coming back when the impact occurred.

Without even looking at the damage to the vehicles we can know simply by looking at the yaw mark in relation to the gouges in the centre of the eastbound lane and this should tell us that there must have been a lot of crush at the left front of the Honda and possibly further back along the left front fender. There would also be a lot of crush to the right front of the Dodge Pick-up truck where the right front occupant was fatally injured. So now all the facts from the media report make sense.

As a result of the impact the Honda was displaced to the south roadside as shown in the photo below.



Evidence that the left front of the Honda was demolished is demonstrated by the evidence of plowing of the earth in comparison to where the oil stain is located. Generally the oil stain at the final rest position of a vehicle identifies the centre front of the vehicle. Because the plowing of the earth is to the left of the oil stain in confirms where all the deformation occurred on the vehicle.

Also because of the unusual manner in which the impact occurred the eastbound Dodge Pick-up truck was thrown to the north side of the road as evidenced by the photo below.



A resident who was first to arrive at the scene reported that Dr. Shaughnessy was thrown out of his vehicle. I can confirm from the evidence at the site that this observation is correct however I have decided not to show evidence of this for reasons I do not feel I should discuss.

In summary let me go off the reconstruction track for a brief moment.

The life of every individual is precious and some persons leave a bigger splash when their stone is finally tossed in the ocean. I do not know Dr. Shaughnessy but have read of the many persons his life has touched and made better. It is truly a tragedy when the citizens of Ingersoll, and its hospital have lost such an apparently loved individual. I understand he reared a family of four children on his own. A great undertaking. There must be numerous things I am simply unaware of and never will know. At the same time another individual also perished in this incident who was the father of the driver of the Dodge Pick-up truck. His stone has left no smaller splash in the lives of his family and those who knew him. I hope we all consider how our families' lives and those who know us would be affected if we suddenly perished in such a tragedy.

So take close note of some of the discussions from this website. Nothing is so important that you need to rush to your death. Nothing is so consuming that it must take your focus from your driving. Pay attention. Don't drive while being impaired by alcohol, drugs, tiredness, anger, cell phones, radios or the passengers in your vehicle. Wear

your seat belt **properly**, leave plenty of space, check your blind spots, adjust to weather conditions, drive predictably, and pay special attention to curves on rural highways.

UPDATE: December 5, 2010

I was contacted by e-mail recently by the London Free Press reporter who wrote the paper's article on this story. He indicated:

"I am the Free Press reporter who wrote about the collision that killed Dr. Shaughnessy. Below is a copy of the OPP release that was our only description of the collision. Please note police wrote that Shaughnessy's vehicle, "entered into the opposite lane and struck and eastbound." You've presented interesting evidence that the police were wrong, but it would be helpful if you could note that our description was based on a police report and not "journalistic creativity."

Although I attempt to provide factual information with respect to recent collisions, the written form of my discussions has been rather informal and editorial. I have had my fill of writing dry, formal reports and this NEWS section is a way of allowing me some freedom of expression. I may have offended this reporter, that was not my intent and if so I apologize. When I wrote the "journalistic creativity" comment I myself was musing over the possibilities of how this collision might have occurred and I recognized some unusual facts before I even set out to examine the collision for myself. In no way did I mean to suggest that this reporter was making up some kind of story.

However I have been critical of news media reports in past articles. Rarely to single out one reporter but to express my frustration that the public is not served well. While there is a recognized need for the public to know about a deceased's life and how that person might be missed by family and friends, from my viewpoint the families, friends and general public must be made aware of more specifics. For the families and friends it is a matter of getting quick information even though it might be wrong to some extent because I am not privy to all the facts.

For the public it is a matter of education and reflection on what they must be aware of and the specifics of what dangers exist. I believe you can expend a great amount of energy preaching about the dangers of driving while impaired by alcohol, speeding or not paying proper attention to your driving. But after a while many people turn down the volume, particularly those to whom this preaching mostly applies. My contribution is to present the specifics and perhaps gain the attention of those who might otherwise ignore traditional methods of behaviour modification. I want the public to become the experts in understanding the physical evidence rather than simply being preached at. I want people to become interested in these very deadly things of what they know so little about.

I accept there are reasons why news media and police cannot jump onto the internet and begin spilling out all the details of what is known. If we think about it there are reasons for these things. But somewhere along the road someone has to step in and

provide some educational advice and not let the event pass by until the next one occurs. Many collisions occur in a similar way and are affected by very similar factors of which the general public has no idea. Without criticizing individual reporters, in my opinion the news media as a whole can do a better job of passing on more educational information to their readers/listeners than what they do.

By the way, I do not think that I presented evidence that the police were wrong. I think the words they used in their news release was rather general: that the Shaughnessy vehicle crossed the centre line of the road, and this type of general commentary is typical of what the public receives. The devil is in the details and this is not what the public receives. I hope I can fill in some those holes when the police are not able to be specific.