

# **Multi-Vehicle Nighttime Pedestrian Fatality**

## ***Assignment***

You asked Texas Claims & Consulting Co. to conduct an auto accident reconstruction analysis for the above styled case involving Mrs. Smith, Mr. Jones and Mr. Brown. Additionally, you asked that we prepare a preliminary expert report of our findings, conclusions and opinions based on the information provided to date as well as our field and office analysis. Please accept this "*Preliminary Expert Report*" as fulfillment of the assignment as of this date. Any new information may, or may not, affect the final expert analysis.

## ***Material Provided***

1. Claims Service letter dated March 24, 2005
2. Claims Service letter dated March 29, 2005
3. Police Report regarding Jones vs Brown
4. Police Report regarding Smith v Jones (as the pedestrian) and the car owner
5. Accident site photographs
6. 1994 Toyota Camry damage photos
7. 2000 Mirage damage photos
8. Statement by Mrs. Smith taken on March 2, 2005
9. Statement by a witness taken on March 3, 2005
10. Statement Summary of another witness

We request that the official police report on both accidents be obtained. The information provided so far does not include any police statements, photos or diagrams. Additionally, since the investigating officer marked the pavement those measurements may have been used in conjunction with a Total Station Laser Camera. The data produced from those measurements would be helpful.

## ***Initial Preparation & Field Activity***

On March 24<sup>th</sup> and 25<sup>th</sup> we reviewed the material provided and planned our field assignment for the next morning. We reviewed overhead satellite photo images provided by the U.S. Geological Society of the site area in order to prepare preliminary drawings for use in the field.

On March 26, 2005 we conducted our field assignment at the accident site. From our office in Humble, Texas the one-way mileage was 215 miles and the total was 430 miles for the entire day. Our field and drive time encompassed the entire day from 7:00 AM to 7:30 PM.

Very detailed measurements were obtained in the field from which we prepared the scale diagrams seen as exhibits to our report. Additional drawings can be prepared should you desire a different format.

Photographs of the accident site were also obtained and are attached as exhibits to our report. These photos can be transferred to a CD if requested. However, the text under the photos cannot be transferred.

### ***Brief Historical Review***

On July 25, 2005, at about 8:42 PM, in and near the intersection of FM 31 and exit 620 off I-20, a major auto accident occurred between Mr. Jones and Mr. Brown.

About six (6) minutes later, and in the same immediate area, a second impact occurred between Mrs. Smith, Mr. Jones' vehicle and Mr. Jones as a pedestrian.

As a direct result of the first accident, conditions at the intersection changed dramatically and these new conditions contributed to the reasons for the second accident. A more thorough analysis of this issue is discussed later in this report.

### ***The Participants***

#### Crash # 1

Jones, driver of a 2000 Mitsubishi.  
Fields, owner of the 2000 Mitsubishi.  
Witness, right front seat passenger  
Witness, left rear passenger  
Brown, driver of a 1990 Cutlass  
Cruz, owner of the 1990 Cutlass

#### Crash # 2

Fields, as owner of the vehicle Howard was driving.  
Jones, as a pedestrian  
Smith, driver and owner of a 1994 Toyota

#### Potential Witnesses

Bennett  
Land  
Ross  
Two white males identified by Bennett

## **Crash # 1**

The exact etiology of the initial accident has not been determined as of this date. However, we are able to render some preliminary opinions based on the physical facts, witness statements and basic reconstruction techniques.

1. Jones had been traveling eastbound on I-20 as he approached the FM 31 exit, which is designated as exit # 620 off I-20.
2. Jones did exit I-20 and proceeded to the stop sign at FM 31.
3. Land indicated Jones stopped at the stop sign.
4. The actual location of the Jones vehicle, if stopped at the stop sign, is unknown.
5. A scenario can be supported, based on thrust angles and post impact positioning, that Jones either (a) stopped at the stop sign and then proceeded out into the intersection very slowly or (b) stopped past the stop sign and into the intersection or (C) never stopped at the stop sign but was proceeding very slowly. In situation (b) Brown may have some responsibility for the accident for failure to keep a proper lookout and faulty evasive action. Additionally, the reason Jones exited at this location is unknown. The only logical option for Jones is to turn left or right on FM 31 since the access road eastbound re-enters on I-20. If Mr. Bennett's statement is reasonably accurate, with respect to the location of the Jones vehicle prior to the second accident, then it may be that Jones was going to go straight, and continue his trip to Shreveport as stated by Ms. Land. If that is true, why, did he exit in the first place?
6. The approximate location of Jones' vehicle prior to the first impact was provided by one of the witnesses. Additional witness testimony is pending.
7. The impact between Jones and Brown caused Jones' vehicle to rotate counter clockwise approximately 360 degrees and remain in the intersection, facing east. The impact caused the Brown vehicle to rotate counter clockwise approximately 180 degrees after traveling about 160 feet to rest at the bridge.
8. Witnesses stated Jones got out of his car then fell to the ground unconscious. He was on the ground between his vehicle and the Smith vehicle.
9. Witnesses stated that as Smith approached the bystanders were running from the impact area in at least two different directions.
10. There may have been as many as four or five cars parked in or near the first impact site and may have contributed to the visual complexity of the area.

## **Crash # 2**

The second collision is easier to explain given the investigating officer was able to spot each vehicle's post impact at rest position and the location of Mr. Jones' body after impact. The investigating officer's full police report has not been provided as of this date.

Our preliminary findings are,

1. Smith stated she was traveling northbound on FM 31, at approximately 60 mph or 87.99 feet/second.
2. The speed limit at the time was 65 mph or 95.32 feet/second
3. The roadway surface (very worn asphalt) coefficient of friction was determined to be  $f=0.50$  with the resulting acceleration rate as  $a= (-) 16.1$
4. She stated her low-beam headlights were on at the time.
5. Low beam headlights, under optimal conditions, can reveal objects on the left side at a distance of about 125-150 feet and on the right side at about 150-200 feet.
6. Flashing lights, headlights glare or other lighting can significantly reduce the visibility distances as much as 50% and/or contribute to the visual complexity of the area.
7. Smith's nighttime, compound, complex and discriminative reaction time is estimated to be no less than 3 seconds.
8. At the posted speed limit of 65 mph Smith would travel 285 feet during her perception and reaction time. At 60 mph, she would travel 263 feet during her perception and reaction time.
9. Smith slid into impact with complete brake lock. According to the investigating officer, Smith slid about 113 feet prior to impact.
10. The minimum speed required to skid 113 feet, over this road surface, is calculated to be 60.32 feet/second or 41 mph.
11. After impact, Smith's vehicle traveled 45 feet to rest from the area of initial contact.
12. Smiths' slide to stop distance is 240 feet @ 60 mph and 282 feet @ 65 mph.
13. Smiths' total time to stop at 60 mph is 8.5 seconds and 9.0 seconds at 65 mph, both including a three-second reaction time.
14. Jones' vehicle rotated counter clockwise after impact from Smith and was moved 28 feet from the approximate area of impact

### ***Preliminary Conclusions***

It is my expert opinion, base on my review of the data provided, our field and office analysis, and my training, knowledge and over 32 experience in accident causation and reconstruction that Smith is negligent free in this accident.

The basis for my opinion is as follows,

1. The accident occurred during nighttime conditions.
2. The overhead light at the intersection was, from Smiths' perspective, behind the accident. This would have produced shadows, engulfing the Jones vehicle, the bystanders and Jones' body on the pavement.
3. At night the pavement would appear black. Jones is a black male. The combination of the two would show very little, if any, contrast and therefore be extremely difficult to discriminate.

4. Smith was faced with a compound, complex, nighttime visual situation that would require a minimum of three seconds perception/reaction time.
5. Smith's low beam headlights would reveal the developing situation to her at a distance that would not allow her to make any successful avoidance maneuver.
6. Due to the combination of other vehicles parked in the immediate area, headlight glare, multiple visual distractions and bystanders moving in both directions, Smith's only reasonable avoidance technique would be to hit the brakes.
7. Smith's heavy braking avoidance maneuver was not successful because her time and distance to stop exceeded the time and distance available.

It is also my expert opinion that the accident between Jones and Brown placed Smith in an unavoidable accident scenario. The negligence issues between Jones and Brown are still being explored.

Respectfully,  
Texas Claims & Consulting Company

Ted Marules, Sr.  
President