

Auto/Pedestrian Fatality Accident

Assignment

Texas Claims & Consulting Co. was asked to determine the proximate cause and all reasonable contributing factors for this auto/pedestrian fatality accident.

Discussion

The following information was provided for our review in anticipation of this report,

1. The Palestine, Texas Police Department Report
2. The Palestine, Texas Police Department's Scale Diagram Measurements
3. Twelve color copies of twelve accident site photographs taken at the time of the accident.
4. The Depositions of all witnesses
5. The City of Tyler, Texas Certificate of Death
6. Pedestrian's medical records from Palestine Regional Medical Center
7. Pedestrian's medical records from Trinity Mother Francis Hospital
8. Medical expert report
9. Physician's expert report dated November 12, 2001

Brief Historical Review

This is a nighttime auto/pedestrian fatality accident that occurred about 6:46 P.M. on Friday, January 26th near the 500 block of West Palestine Avenue in Palestine, Texas.¹ The closest intersection is the 1000 block of North Jackson Street. The end of civil twilight, in this area for this date, was 6:18 P.M.²

Mr. Smith was the driver and owner of a 1989 blue Plymouth Grand Voyager proceeding east on West Palestine Avenue in the left of two eastbound lanes. Mr. Smith's passengers included his wife and three children. The pedestrian traveled from Mr. Smith's right to his left.

Mr. Jones, the pedestrian, was crossing West Palestine Avenue from south to north. The vehicle came from Mr. Jones' left.

¹ Palestine Police Department Official Report Dated January 26, 2001

² U.S. Naval Observatory Astronomical Applications Department

As Mr. Smith continued to drive eastbound, Mr. Jones attempted to the cross the street and struck the passenger side of the vehicle at or near the left front quarter panel, damaging the vehicle's antennae and rearview mirror. There is no evidence the pedestrian struck the front bumper, front headlight or grill on the vehicle. Mr. Smith testified he did not see the pedestrian prior to impact.³ Mr. Smith also testified that he began to stop immediately after impact. He also testified that either his wife or one of the children indicated Mr. Jones was running towards his van in a bent over position in dark clothes.⁴

The final resting place of the pedestrian was identified by the investigating police officer and documented to be approximately fifty-eight (58) feet east of West Palestine Avenue's intersection with North Jackson Street.⁵ A marked pedestrian crosswalk, with pedestrian control buttons, is available at this intersection. There is no evidence the pedestrian crosswalk signals were not working properly at the time of the accident.

With respect to injury sustained and the cause of death,

“...The X-rays and CT scan done at Palestine Memorial Hospital before Mr. Jones was transferred to Trinity-Mother Francis Hospital were all negative. There were no fractures of the ribs, cervical, thoracic and lumbar areas nor any injuries to the abdominal and pelvic organs. This finding is not consistent with the car hitting the pedestrian but rather the pedestrian sustaining a glancing blow from the vehicle and the only injury was a subdural hemorrhage which would be consistent with falling and hitting the head on the ground...”⁶

Significant Police Report Data

The following information is considered significant for this case,

1. The date of loss
2. The accident occurred at 6:46 P.M.
3. The area speed limit was 35 miles per hour or 51.33 feet/sec
4. The point of impact was approximately 58 feet east of North Jackson
5. Light Condition was Dark-Lighted
6. Weather was clear
7. Road Surface was dry
8. Road surface was bituminous concrete

³ Deposition

⁴ Deposition

⁵ Palestine Police Department's Scale Diagram & Deposition

⁶ Medical expert report of October 24, 2001.

9. The pedestrian struck the right front quarter panel of the vehicle
10. The Official Police Report does not indicate any witness names

In the officer's opinion the pedestrian failed to yield right of way to the vehicle.

Field Activity

Our office conducted field analysis of the site on August 3, 2001 and on October 19th. On those dates measurements for a full-scale diagram of the area and appropriate photographs were obtained. The police officer's road markings were still visible.

Photographs of the pedestrian's clothing were obtained

Description of the Accident Site

West Palestine Avenue runs generally in an east/west direction. There are four moving lanes, two in each direction, divided by a double yellow roadway marking. The eastbound curb lane measured fifteen (15) feet and the eastbound inside lane measured twelve (12) feet. The westbound curb lane measured fifteen (15) feet and the inside lane measured twelve (12) feet.

At the intersection of North Jackson Street there is a lighted, designated, pedestrian crosswalk area with "push to walk" buttons available.

A vehicle traveling eastbound may approach North Jackson Street at a posted speed of thirty-five (35) miles per hour. The vehicle encountered a two-degree down slope.

Approximately twenty-five (25) feet prior to the intersection is a yellow and black school crossing sign designated as "S2-1." This School Crossing Sign is intended for use at established crossings including signalized locations used by pupils going to and from school.⁷ It is important to note that this accident occurred after school hours. This may affect a driver's "danger expectancy," an issue that is discussed in more detail later in this report.

Rusk Primary School building is located approximately fifty (50) feet east of North Jackson extended curb line and forty-two (42) feet south of West Palestine Ave. In front of the school are two very large trees whose branches extend out over the roadway covering both eastbound lanes.

⁷ Uniform Manual on Traffic Control Devices

On the north east side of the intersection there are three businesses. From west to east they are T & G Auto Sales, Rapid Lube Oil Change and a small self-serve car wash. The car wash area is known as a local gathering place for young people.⁸ The immediate area does not have any grocery store or place to buy cigarettes or cigars.

Pedestrian's Clothing

The clothing was inspected and photographed on October 19th at the Palestine Police Station. The clothing is described as follows,

1. Pants---Light blue jeans
2. Pants---Dark blue nylon pull over pants
3. Jacket---Red Parka or sweatshirt
4. Boots---Black military style boots
5. Undershirt---Stripped undershirt
6. Over shirt---Dark blue with colored stripes

The portions of clothing that were visible to the vehicle's driver were dark in color and would not be as visible as lighter clothing at night. Dark clothing on a pedestrian makes them much harder to see at night because the clothes themselves may only reflect three (3) to five (5) % of the light reaching them.⁹ Clothing is known as a diffuse reflector, which is characterized by a rough texture that reflects light more or less equally in many directions. This visibility issue becomes even more complicated when the pedestrian is in an area of low contrast or silhouetted against a low contrast dark object or obstruction.

Pedestrian's Path

The projected path taken by the pedestrian was analyzed using two distinct and separate points from which a logical extension was prepared.

1. The testimony provided by a witness suggests that the pedestrian was "walking fast" on North Jackson Street approaching West Palestine Avenue.¹⁰ If true, he would be required to walk on the west side of Rusk School, along the sidewalk and next to the school fence. It is important to note that the school building does not extend to North Jackson Street, but rather is offset by fifty (50) feet.
2. The position of the body, post impact, has been identified by all of the witnesses to be in front of the Rusk School. The officer measured that

⁸ Deposition of Officer

⁹ Dr. Paul Olsen, *Forensic Aspects of Driver Perception and Response*, 1996.

¹⁰ Deposition of witness

distance to be fifty-eight (58) feet. Further reference can be the large tree and telephone pole. It is clear that the pedestrian struck or “pushed off” the side of the vehicle as it passed. The damage to the vehicles right side rear view mirror and the absence of any serious observable injury to the body, as described in the doctor’s report confirms this crash etiology. Therefore, the final resting position for the body is within a very few feet of the actual point of impact. The body will not be carried any distance by the vehicle under these conditions. At impact the body will spin clockwise, more likely with arms extended, and fall immediately to the ground. The driver testified the body fell straight to the ground.¹¹ The arm extensions, while spinning, will inhibit rolling over and over on the ground. Therefore, the final resting position of the body is very near the area of initial impact.

The pedestrian must pass the end of the fence prior to proceeding east on West Palestine Avenue. If we draw a straight line from the end of the fence, through and past the final resting position of the body and continue that line across West Palestine Avenue, then that line points directly to the car wash area. The line represents the closest distance between two points, that being the end of the fence and the small car wash area known as a local hangout for young people in the area.

It is logical to conclude that the pedestrian did not cross at the designated and protected crosswalk area, but rather attempted to cross West Palestine approximately fifty-eight (58) feet east of the crosswalk.

One of our scale diagrams reveals our opinion of the path taken immediately prior to impact.

Calculated Distance to Stop

The total distance to stop from any given speed can be calculated using known scientific formulae.¹² Mr. Smith testified to a forward speed of 52 kilometers/hour which converts to 32 miles per hour. Mr. Smith testified he immediately started to stop when his wife yelled, and he heard the thump.

Given: Initial Velocity of 52 kilometers per hour (32 mph)¹³
 Road Surface is blacktop/traveled to road polished
 Coefficient of friction (f) = 0.50 to 0.75¹⁴

¹¹ Deposition of the driver

¹² Northwestern University, Basic Motion Equation # 10

¹³ Deposition of the driver

¹⁴ Northwestern University Coefficient of Friction for Various Road Surfaces

Road slope = - 2 degrees
Adjusted Coefficient of Friction = 0.48 to 0.73
Deceleration Rate = (-) 15.45 to (-) 23.50
Reaction Time for *Simple Reaction* = 0.20¹⁵
Reaction Time Distance = 9-10 feet

Find: Total Distance to Stop

The distance traveled while the driver completes his reaction time is about 10 feet under these conditions.

The distance range that the car travels while braking is calculated to be from 46 feet to 70 feet.

Therefore, the total distance to stop can range from 56-80 feet.

Mr. Smith testified that after the impact he immediately applied the brakes and came to a stop. He then backed up, some unknown distance, and stopped near the body. Our calculation indicates he stopped approximately 60 feet past impact, and that falls within the range of his total distance to stop. This calculation confirms his speed. This calculation also confirms the body was struck and came to rest in the same area. These related facts, as well as others, conclusively prove the pedestrian was not in the crosswalk at initial impact nor was he carried, post impact, to final rest by the van.

Pedestrian Visibility Issues

It has already been discussed that the pedestrian's dark clothing made it harder to be seen by passing motorists. While very important, his dark clothing was not the only complicating factor in this accident. The following list complicates the auto/pedestrian relationship and in some cases was present at the time.

1. It is well known that the human eye simply does not see as well at night as during the day. In order to be seen at night, any dark object must be sufficiently brighter than its background. In our case, the pedestrian had on very dark clothing and was moving through a background that itself was very dark. Therefore, there was very little if any contrast between the pedestrian and his background making him difficult to be seen.
2. Headlight glare from an approaching vehicle has an adverse affect by placing greater brightness in the driver's visual field. In this case, Mr.

¹⁵ Lynn B. Fricke, Traffic Accident Reconstruction. Northwestern University Traffic Institute

Smith was traveling opposite to Mrs. Thomas who testified she had on her headlights.

3. A vehicle's headlight aim, even one degree off, can reduce visibility distance from 24-45 %¹⁶
4. The effects of dirt on the windshield or headlights reduce useful light and increases glare.
5. Pedestrian's frequently draw the conclusion that since they can see the car's headlights that the driver can see the pedestrian. This assumption is completely untrue.
6. Alcohol is estimated to be a contributing factor in 40 % of auto fatalities and almost 75 % of all fatal crashes involving alcohol occur at night.¹⁷
7. Adult jogging speed, in feet per second, for males age 20 is 14.1 fps.¹⁸ If the pedestrian was running he would be at impact in less than 1 second from the curb.
8. Adult walking speed, in feet per second, for males age 20 is 6.5 fps.¹⁹ If walking, he would be at impact in about 2 seconds. If he was walking "fast"²⁰ as described by a witness, then he reaches the impact in less than 2 seconds.
9. Numerous visual obstructions exist at this intersection. There is a small building on the southwest corner (Bailey's Upholstery). There are light poles, a telephone pole and a very large traffic control signal box on the corner on the south side of the intersection.
10. The area, while maintaining two overhead streetlights, is a very dark area at night. A large tree by the school blocks light from the overhead light across the street. At night the school building is dark, the grass is dark and the trees are dark. All of these items will create a dark background and reduce contrast thus reducing a pedestrian's visibility to on-coming traffic.
11. "Danger Expectancy" relates to various driving circumstances in which the driver is, or is not, alerted to a dangerous situation. For example, a driver sees a group of children riding bikes in the street. The driver's danger expectancy is heightened. However, a driver driving down a dark county road at night does not expect to see a pedestrian run across his path. In that case his danger expectancy is low.

¹⁶ Paul L. Olsen, *Visibility Problems in Nighttime Driving*, S.A.E. Technical Paper # 870600

¹⁷ Jerry J. Eubanks, *Pedestrian Auto Reconstruction, 1994*

¹⁸ Jerry J. Eubanks, *Pedestrian Auto Reconstruction, 1994*

¹⁹ Jerry J. Eubanks, *Pedestrian Auto Reconstruction, 1994*

²⁰ Deposition of a witness

Opinions Provided by the Plaintiff's Expert

We were provided an unsigned, four page, report. The plaintiff's expert listed five specific conclusions on page four of his report. The following is a restatement of each of his conclusions and our analysis.

- A. Mr. Smith knew he was approaching an intersection and that there might be pedestrians there, thus he failed to keep an adequate lookout.

Comment: Federal Rule 26 (a) (2) (B) requires a basis for each opinion expressed. No basis is provided for opinion (A). This conclusion cannot be drawn from the facts presented. This opinion is illogical in nature. Concluding that Mr. Smith failed to keep a proper lookout assumes (1) the pedestrian was visible, (2) that Mr. Smith had sufficient time and distance in which to perceive and then react to the pedestrian, and finally (3) that Mr. Smith should anticipate that a pedestrian would not use a lighted, designated and protected crosswalk area. None of these conditions existed.

- B. The accident site was adequately lit at the time of the accident.

Comment: Federal Rule (a) (2) (B) requires a basis for each opinion expressed. No basis is provided for opinion (B). In reality, there are two overhead streetlights; one at the protected crosswalk and the second one more than sixty (60) feet past where the initial impact occurred. Neither provided light in the immediate impact area. Photographs taken by the Palestine Police clearly show the area is very dark. There is a large tree in the immediate area that would diffuse light from across the street making the impact area very dark.

- C. There is a distinct possibility that Mr. Smith ran the red light.

Comment: Federal Rule 26 (a) (2) (B) requires a basis for each opinion expressed. No basis is provided for opinion (C). The actual record indicates the red light issue cannot be confirmed. Apparently this expert does not want to consider all of the testimony. Mr. Smith testified his light was green. Mrs. Johnson, an unbiased witness, testified the light was green. Mr. Clark indicated his light was green.

- D. The point of impact was less than twenty (20) feet past the intersection, and if the pedestrian was in fact walking at an angle, he would have traveled less than seven strides from the corner curb lane when he was hit.

Comment: Federal Rule 26 (a) (2) (B) requires a basis for each opinion expressed. No basis is provided for opinion (D). This expert does not indicate the relationship between twenty (20) feet and seven (7) strides. Actually, there is no relationship so the opinion cannot be drawn from the facts presented.

- E. There is a distinct possibility that the crossing light was not operating properly.

Comment: Federal Rule 26 (a) (2) (B) requires a basis for each opinion expressed. No basis is provided for opinion (E). This expert stated that according to the City of Palestine they were notified on January 20, 2001 that the “Don’t Walk” light for northbound pedestrian traffic was not functioning. The actual date of loss is January 26, 2001 so a signal light problem four days later cannot be conclusive evidence the light problem existed at the time of the loss. The argument is illogical since he himself indicated the pedestrian did not cross at the designated, lighted and protected crosswalk area. So, even if the light was not working properly the pedestrian did not use the crosswalk anyway. Finally, the “Don’t Walk” light is not the controlling factor for pedestrians. If the light was not working, and the pedestrian signal light was red, would a prudent person cross anyway? Of course not! A reasonable and prudent pedestrian would first look to the red/green signal light to determine if it was safe to cross, and then observe traffic in the immediate area or close proximity to the intersection prior to crossing.

Opinions

Opinion No. 1

The pedestrian did not attempt to cross West Palestine Avenue at the lighted, designated and protected, crosswalk area. Rather he attempted to cross approximately sixty (60) feet further east of North Jackson in a poorly lighted, low visual contrast, undesignated and unprotected area while wearing dark clothing.

Basis

The following factors are basis for opinion no. 1,

1. The investigating officer measured the distance from the final resting place of the body back to North Jackson intersection. That distance was measured to be fifty-eight (58) feet.
2. Numerous witnesses confirm the final resting place for the body was in front of the Rusk Primary School. A large tree is also mentioned as a point of reference standing about 70 feet east of North Jackson Street crosswalk.
3. The closest corner of the Rusk Primary School is fifty (50) feet east of the North Jackson Street extended curb line
4. The body struck the side of Mr. Penton's vehicle, spun clockwise, and came to rest in the same general area.
5. The driver's total distance to stop after impact and the distance he backed up confirmed the initial point of impact.

Opinion No. 2

The pedestrian's dark clothing, in a poorly lighted area and against a very low contrast background, made him extremely difficult to be observed by passing motorists.

Basis

The following factors are basis for opinion no. 2,

1. The clothing was examined and found to be very dark in color and would produce a very low reflective percentage of the available light. Even his boots were military black.
2. The area lighting exists of two overhead lights with one on the corner at the intersection and one about sixty (60) feet past the initial point of impact and on the other side of the street.
3. Night photos taken by the Palestine Police Department clearly indicate the impact area is poorly lighted.
4. The trees, the school building, various other poles and obstructions contributed to a very dark background. A dark object on a dark background produces little, if any, contrast and is therefore extremely difficult to perceive.

Opinion No. 3

The distance the pedestrian traveled from the curb to the initial impact was measured to be approximately twelve (12) to fifteen (15) feet. Considering both a walking speed of 6.5 fps and running speed of 14.1 fps, for males of his approximate age, he could reach the point of impact in from one to two

seconds. This is insufficient time for the driver to perceive and then react to the situation.

Basis for No. 3

The following are basis for opinion no. 3,

1. Accepted mathematical calculations concerning time, distance and speed.
2. Current scientific research on adult walking and running speeds previously discussed.
3. Current scientific research on nighttime visibility problems previously discussed.
4. Current scientific research on the time required to perceive and then react to a dangerous situation at night previously discussed.

Conclusions

It is my expert opinion that, the pedestrian's negligence for failing to stop and yield right of way to the vehicle is the direct proximate cause for this fatal auto/pedestrian accident.

I do not see any negligence for Mr. Smith, as it is further my expert opinion he had neither sufficient time nor distance to perceive, react to and then take any successful evasive action.

Respectfully submitted,
Texas Claims & Consulting Co.

Ted Marules, Sr.
President