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REMOTE NOT IN TRAFFIC SURVEILLANCE BACK OVER INVESTIGATION

CASE NUMBER - IN-07-029

LOCATION - OKLAHOMA

VEHICLE - 2005 CHEVROLET SILVERADO, EXTENDED CAB

INCIDENT DATE - May 2007

Submitted:

October 24, 2007

Revised: March 13, 2008



Contract Number: DTNH22-07-C-00044

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

Technical Report Documentation Page

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15. <i>Supplementary Notes</i> Remote not in traffic surveillance back over investigation involving a 2005 Chevrolet Silverado extended cab pickup truck and a pedestrian.					
16. <i>Abstract</i> This report covers a remote not in traffic surveillance back over investigation involving a 2005 Chevrolet Silverado extended cab pickup truck and a pedestrian. The Chevrolet's driver stopped in the street in front of a residence and the right front passenger got out. The Chevrolet's driver then backed the vehicle into the driveway of an adjacent residence located on the same side of the street, in order to turn around. Unknown to the Chevrolet's driver, the pedestrian (5-year-old, male) was playing in the driveway. As the driver backed the vehicle into the driveway, the right portion the Chevrolet's back bumper impacted the pedestrian and knocked him to the pavement. The driver continued to back up and the right rear tire ran over the pedestrian. The Chevrolet's driver then pulled forward and again ran over the pedestrian with the right rear tire. The driver stopped the vehicle when she heard the screams of the person she had previously dropped off. The pedestrian was transported by ambulance to a local hospital and was pronounced dead a short time after arrival in the emergency room. The medical examiner reported the cause of death as closed head trauma. There was insufficient information to determine if rear visibility was a factor in this incident.					
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TABLE OF CONTENTS

IN-07-029

	<u>Page No.</u>
BACKGROUND	1
SUMMARY	1
CRASH CIRCUMSTANCES	1
CASE VEHICLE: 2005 CHEVROLET SILVERADO, EXTENDED CAB	3
CASE VEHICLE DAMAGE	3
CASE VEHICLE DRIVER	4
VISIBILITY STUDY	4
PEDESTRIAN	6
PEDESTRIAN INJURIES	6
NOMINAL VISIBILITY DIAGRAM	8
SCENE DIAGRAM	9
NOT IN TRAFFIC SURVEILLANCE BACK OVER DATA FORMS	

This incident was brought to NHTSA's attention on or before June 25, 2007 by NASS GES sampling activities. This incident involved a 2005 Chevrolet C1500 Silverado extended cab pickup truck and a pedestrian. The incident occurred in May, 2007 at 3:03 p.m., in Oklahoma and was investigated by the applicable city police department. The police completed an "Official Oklahoma Traffic Collision Report" and submitted a copy of the report to the state. This incident is of special interest because the Chevrolet's driver was backing the vehicle into a driveway and struck a pedestrian (5-year-old, male) who sustained a police-reported "K" (fatal) injury. The Chevrolet was initially impounded but subsequently released to its owner (i.e., not the driver) who could not be located. Numerous attempts were made to locate the Chevrolet, including requesting assistance from the investigating police agency. The Chevrolet's driver was incarcerated and was not available. As a result, the Chevrolet was not available for inspection, and this incident was assigned as a remote investigation on August 23, 2007. This report is based on the police crash report, police on-scene photographs, inspection of a similar vehicle, photographs of the pedestrian, and the medical examiner's report.

SUMMARY

The Chevrolet was traveling west in the westbound lane of a residential street. The driver stopped in the street in front of a residence located on the north side of the street and the right front passenger got out. The Chevrolet's driver then backed the vehicle to the east and into the driveway of a residence, also on the north side of the street and immediately east of passenger's residence, in order to turn around and travel eastbound. Unknown to the Chevrolet's driver, the pedestrian was playing in the driveway. As the driver backed into the driveway, the right portion the Chevrolet's back bumper impacted the pedestrian and knocked him to the pavement. The driver continued to back up and the right rear tire ran over the pedestrian. The Chevrolet's driver then pulled forward and again ran over the pedestrian with the right rear tire. The driver stopped the vehicle when she heard the screams of the person she had previously dropped off. The pedestrian was transported by ambulance to a local hospital and was pronounced dead a short time after arrival in the emergency room. The medical examiner reported the cause of death as closed head trauma. There was insufficient information to determine if rear visibility was a factor in this incident.

CRASH CIRCUMSTANCES

Crash Environment: This incident occurred in a residential neighborhood in the concrete driveway of a residence (**Figure 1**). The trafficway on which the Chevrolet Silverado was initially traveling was a two-lane, undivided, bituminous city street, traversing in an east-west direction. There were multiple residences and residential driveways intersecting the roadway on both the north and south sides of the roadway. At the time



Figure 1: Overview of scene, red arrow shows area where passenger got out of Chevrolet, green arrow shows driveway where incident occurred

of the incident, the Chevrolet's driver was backing the vehicle in the roadway and into one of the driveways on the north side of the roadway. The driveway was sloped upwards from the roadway. The slope of the driveway is unknown. However, based on the police on-scene photographs, the slope of the driveway did not appear to be in excess of 3%. The pedestrian was reported to have been playing in the driveway. The pedestrian's orientation and movements are unknown. At the time of the incident the light condition was daylight, the weather was cloudy and the pavement was dry. See the Scene Diagram at the end of this report.

Pre-Crash: According to the police crash report, the Chevrolet Silverado had been traveling west in the westbound lane and stopped in front of the passenger's residence located on the north side of the roadway, and the passenger got out of the vehicle. The passenger subsequently became a witness to the incident. The Chevrolet's driver then backed the vehicle to the east and into the driveway of a residence, also located on the north side of the roadway and immediately east of passenger's residence. The driver's intent was to then make a left turn from the driveway and proceed eastbound. Unknown to the driver, the pedestrian was playing in the driveway. Based on the police measurements, the pedestrian was located in the driveway approximately 2.7 meters (8.9 feet) north of the north roadway edge and 1.9 meters (6.2 feet) east of east driveway edge. The Chevrolet's driver made no avoidance maneuvers prior to the incident. The incident occurred in the residential driveway on the north side of the roadway.

Crash: The available information indicated that as the Chevrolet Silverado's driver was backing into the driveway, the right portion the Chevrolet's back bumper (**Figure 2**) impacted the pedestrian and knocked him to the pavement. The driver continued to back up and the right rear tire ran over the pedestrian. According to the police crash report, the Chevrolet's driver stopped and pulled forward and again ran over the pedestrian with the right rear tire before stopping when she heard the screams of the witness. Based on the police on-scene photographs, the medical examiner's report and photographs of the pedestrian, the Chevrolet's right rear tire (**Figure 3**) ran over the pedestrian's head, torso and extremities. There was insufficient information to determine where the driver was looking as she backed up, as well as the distance the Chevrolet backed to impact. Therefore, it was not possible to determine if rear visibility was a factor in this incident.

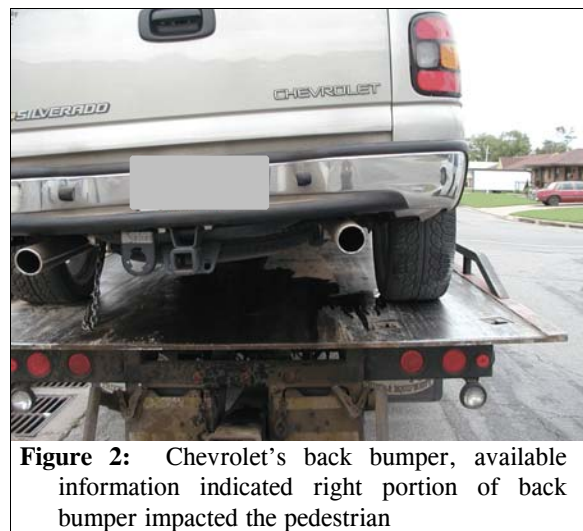


Figure 2: Chevrolet's back bumper, available information indicated right portion of back bumper impacted the pedestrian



Figure 3: Arrow shows hair and blood on right rear tire

Post-Crash: The Chevrolet Silverado came to rest partially in the street and partially in the driveway, heading in a south-southeasterly direction (**Figure 4**). The police crash report indicated that the witness called 911. The Chevrolet's driver went to the witness' residence and sat down on a bench in front of the residence and waited for police to arrive. The pedestrian was transported by ambulance to a local hospital and was pronounced dead a short time after arrival in the emergency room. The medical examiner reported the cause of death as closed head trauma.

CASE VEHICLE

The 2005 Chevrolet Silverado was a rear wheel drive, 4-door, C1500, extended cab, "Sportside", pickup truck (VIN: 1GCEC19T55Z-----) equipped with a 5.3L, V8 engine and automatic transmission. The only police on-scene photograph that showed the cab of the vehicle (**Figure 4**) indicated it was equipped with tinted left and right rear windows and backlight. Close up examination of the photograph indicated that the left front window was closed and also tinted. The status of the right front window could not be determined. The on-scene photographs also showed that there was cargo (i.e., a box) in the truck bed at the time of the incident; however, it did not extend above the truck bed. The Chevrolet was not equipped with a backup/parking aid.

The Chevrolet's recommended tire size was P245/70R17. The police on-scene photographs and the police crash report indicated that the Chevrolet was equipped with after-market tires and wheels (**Figure 5**). The tire size could not be determined from the photographs, and there was no tire size information in the police crash report. Since the size of the Chevrolet's tires could not be determined, it was not possible to obtain an exemplar vehicle for purposes of taking a series of nominal visibility measurements. Specification documents indicated that the Chevrolet's wheelbase was 364 centimeters (143.5 inches), the overall length was 585 centimeters (230.2 inches), and the rear overhang was 126 centimeters (49.8 inches).

CASE VEHICLE DAMAGE

The Chevrolet Silverado sustained no residual damage. Based on the police on-scene photographs and the police crash report it was determined that the right portion of the back



Figure 4: View southwest to Chevrolet's final rest position and blood on driveway indicates location of pedestrian



Figure 5: Case vehicle's right rear wheel

bumper had impacted the pedestrian. Based on this information, a Collision Deformation Classification was estimated to be: **06-BRLN-1 (180 degrees)**. The Chevrolet was towed from the scene and impounded.

CASE VEHICLE DRIVER

Based on the police crash report, the Chevrolet Silverado's driver [28-year-old, White (Hispanic) female; 160 centimeters and 64 kilograms (63 inches, 140 pounds)] was restrained by her lap-and-shoulder safety belt system. The driver's experience operating the Chevrolet is not known. The available information indicated she was not the owner of the vehicle. The police crash report indicated that the driver was arrested, taken to jail and charged with first degree manslaughter and driving while under suspension.

VISIBILITY STUDY

The 2005 Chevrolet Silverado extended cab was a "fender" style (i.e., rear fenders exposed) pickup truck. An exact exemplar to this vehicle could not be located because a "fender" style version of the vehicle could not be found within reasonable driving distance of this contractor's office. In addition, the size of the after market wheels on the subject vehicle was not known. Therefore, a similar vehicle was located and examined. The similar vehicle (**Figure 6**) was a 2005 Chevrolet Silverado extended cab "Fleetside" (i.e., rear fenders not exposed) 4x4 pickup truck (VIN:1GCEK19ZX5Z-----). Based on the vehicle specifications, the difference in the height of the two vehicles in their stock configuration was 7 centimeters (2.7 inches). Based on the police photographs of the subject vehicle, there did not appear to be a significant difference in the height of the two vehicles; therefore, this contractor felt that a reasonable determination of the extent of the blind zones of the subject vehicle could be determined using the similar vehicle and a surrogate driver. The surrogate driver for this study was 185 centimeters (73 inches) tall and his eye height was 161 centimeters (64.6 inches) above the ground as he sat in the driver's seat. The surrogate driver adjusted the seat track to between the middle and rear-most track position, which was his normal seat track adjustment. The rearview and side view mirrors were also adjusted to his preference. Please refer to the Nominal Visibility Diagram at the end of this report when reading the following discussion.

The initial observations were made with the surrogate driver looking over his right shoulder



Figure 6: Overview of similar vehicle: 2005 Chevrolet Silverado extended cab "Fleetside" 4x4



Figure 7: Arrow shows location where target first came into surrogate driver's view as he looked over right shoulder out of backlight; distance back of Chevrolet to target was 7.6 meters (24.9 feet)

out of the backlight. The standard 71 centimeters (28 inches) tall target was then moved rearward from the back of the vehicle along the approximate centerline until the target came into view (Figure 7 above). The target had to be moved rearward from the back bumper 7.6 meters (24.9 feet) before the top of the target came into view over the top of the tailgate. The target was then moved right of the approximate centerline 11.8 meters (38.7 feet) where it became obstructed by the right “C”-pillar. The target was moved an additional 3.7 meters (12.1 feet) to the right where it came back into view through the right rear window. The target was then placed at the right rear bumper corner and moved to the right. The target had to be moved right 3.7 meters (12.1 feet) before the surrogate driver could see it over the top of the truck bed. The target was then returned to the initial position at the approximate centerline and moved to the left. The target was moved only 1.0 meter (3.3 feet) to the left before the surrogate driver could no longer see it because it was not natural for him to turn his head any further to the left.

The same procedure was repeated while the surrogate driver looked through the rearview mirror. The target had to be moved 10.9 meters (35.8 feet) rearward before it came into view over the top of the tailgate (Figure 8). The target was then moved to the right 3.2 meters (10.5 feet) where it was obstructed by the back right head restraint (Figure 9). The view of the target continued to be obstructed by the back right head restraint when moved further to the right. The target was returned to the initial position at the approximate centerline and moved 2 meters (6.6 feet) to the left where it became obstructed by the back left head restraint (Figure 10). The target continued to be obstructed by the back left head restraint when moved further to the left until it went out of the rearview mirror’s field of view.



Figure 8: Close view through rearview mirror from driver's seat; arrow shows target at point it first became visible to surrogate driver



Figure 9: Close view through rearview mirror from driver's seat, arrow shows target where it began to be obstructed by the back right head restraint



Figure 10: View through rearview mirror from driver's seat; arrow shows target at point it began to be obstructed by the back left head restraint

The target was then placed at the left rear bumper corner and moved forward along the left side of the vehicle while the surrogate driver viewed through the left side view mirror. The target

was moved forward from the back bumper 0.5 meter (1.6 feet) where it went out of the bottom of the side view mirror’s field of view. The target was then returned to the left rear bumper corner and moved to the left 1.1 meters (3.6 feet) where it went out of the left side view mirror’s field of view (**Figure 11**). The target was then moved to the right rear bumper corner. This time the target had to be moved rearward from the back bumper 0.9 meter (3 feet) before it came into the surrogate driver’s view at the bottom left of the mirror (**Figure 12**). The target was then moved to the right 2.6 meters (8.5 feet) where it went out of the right side view mirror’s field of view (**Figure 13**).



Figure 11: Close view through left side view mirror from driver’s seat; arrow shows target where it began to go out of mirror’s field of view



Figure 12: Close view through right side view mirror from driver’s seat; arrow shows target where it first came into driver’s view as it was moved rearward from right rear bumper corner

PEDESTRIAN

Based on the police crash report, the pedestrian [5-year-old, White (unknown if Hispanic) male; 117 centimeters and 23 kilograms (46 inches, 51 pounds)] was transported by ambulance to a hospital. He sustained critical injuries and was pronounced dead 36 minutes post-incident.

PEDESTRIAN INJURIES

The medical examiner’s report indicated the cause of death as closed head trauma. No autopsy was performed; however, a post-mortem examination was conducted. The table below



Figure 13: Close view through right side view mirror from driver’s seat; arrow shows target where it begins to go out of mirror’s field of view

lists the pedestrian’s injuries and injury mechanisms.

Pedestrian Injuries (Continued)



IN-07-029

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source (Mechanism)	Source Confidence	Source of Injury Data
1	Traumatic brain injury; died without further medical evaluation or autopsy	unknown 115999.7,0	Tire, right rear	Certain	Post-mortem examination
2	Abrasions left face, not further specified	minor 290202.1,2	Tire, right rear	Certain	Post-mortem examination
3	Contusions right face, not further specified	minor 290402.1,1	Tire, right rear	Certain	Post-mortem examination
4	Contusion right shoulder area	minor 790402.1,1	Tire, right rear	Probable	Police photograph
5	Abrasion posterior surface right upper arm, not further specified	minor 790202.1,1	Tire, right rear	Probable	Post-mortem examination
6	Laceration, curvilinear, left knee	minor 890600.1,2	Tire, right rear	Probable	Police photograph
7	Abrasions bilateral lower extremities	minor 890202.1,3	Tire, right rear	Probable	Police photographs
8	Contusions bilateral lower extremities	minor 890402.1,3	Tire, right rear	Probable	Police photographs

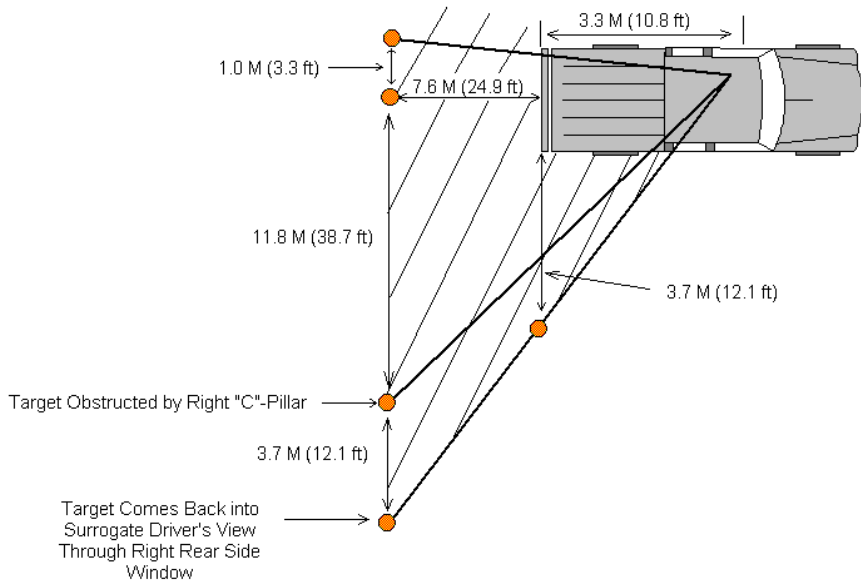
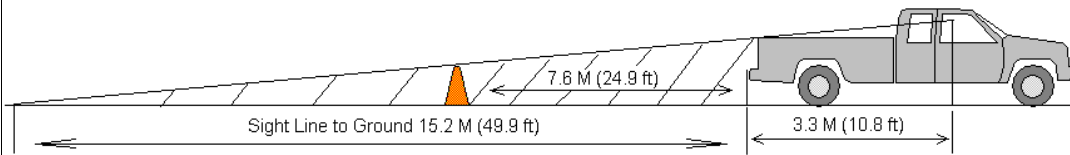
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Nominal Visibility Diagram
 Similar Vehicle = 2005 Chevrolet Silverado 4x4 Extended Cab

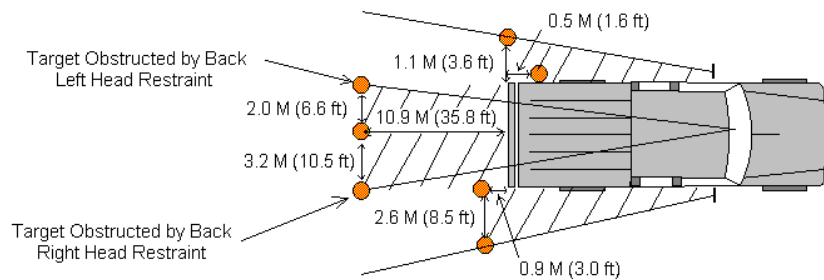
Surrogate Driver's Eye Height From Ground = 161 cm (63.4 in)

-  = Blind Zones
-  = 71 cm (28 in) High Target

1. Distance Back of Chevrolet
 To Point a 71 cm (28 in) High Reference Target
 Comes Into Surrogate Driver's View as He Looks Over Right Shoulder Out of Backlight



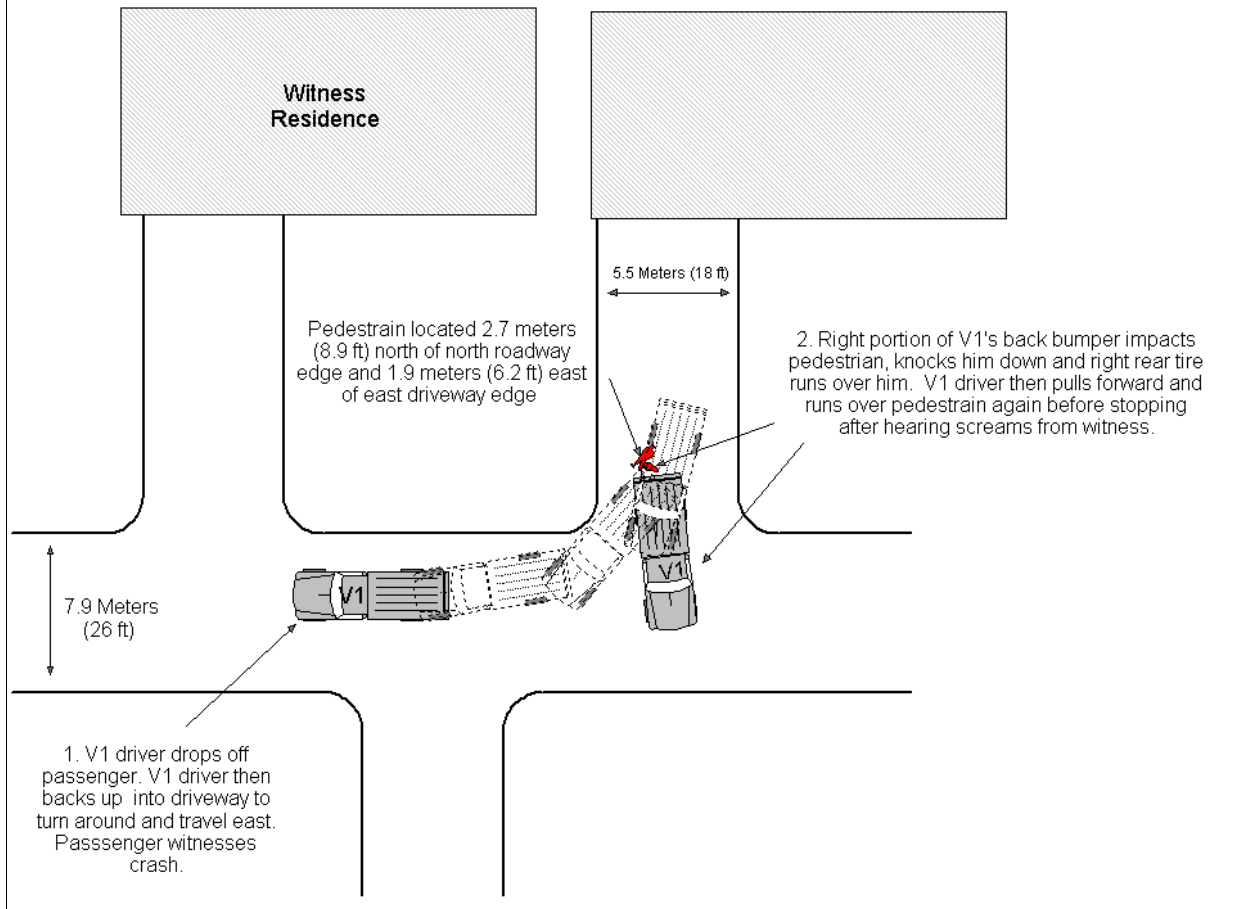
2. Rearview Mirror and Side View Mirrors Blind Zones



IN-07-029



Daylight, Cloudy
Dry, Concrete Driveway and Bituminous Roadway
V1: 2005 Chevrolet Silverado Extended Cab Pickup Truck
Sketch of Events Based on Police Crash Report





1. Case Number

IDENTIFICATION

2. Date of Crash ____ / ____ / ____

3. Time of Crash _____

Code reported military time of crash.

NOTE: Midnight = 2400
Unknown = 9999

AMBIENT CONDITIONS

4. Light Conditions

- Daylight
- Dark
- Dark but lighted
- Dawn
- Dusk
- Unknown

5. Atmospheric Conditions
(Select all that apply)

- Clear-No adverse conditions
- Cloudy
- Rain
- Snow
- Fog, Smog, Smoke
- Sleet, Hail (freezing rain or drizzle)
- Blowing Snow
- Severe Crosswinds
- Blowing Sand, Soil, Dirt
- Other (specify):
- Unknown

6. Temperature

- Below 0 degrees Celsius (Below 32 F)
- 1-10 degrees Celsius (33-50 F)
- >10-24 degrees Celsius (51-75 F)
- Over 24 degrees Celsius (Over 75 F)
- Unknown

SCENE INFORMATION

7. Type of area in which crash occurred
(Select all that apply)

- Single family residential
- Row houses/townhouses
- Multi family housing
- Commercial
- Industrial
- Rural
- Unknown

8. Driver exterior sightline obstructions
(Select all that apply)

- None
- Other vehicles
- Building
- Trees
- Shrubby
- Other (specify) _____
- Utility poles
- Signs
- Glare
- Unknown
- No driver present

9. Crash location

- Driveway
- Parking Lot
- Sidewalk
- Alley
- Intersection of driveway and sidewalk
- Road / street
- Roadside / shoulder
- Other (specify) _____
- Unknown

10. Non motorist sightline obstructions
(Select all that apply)

- None
- Other vehicles
- Building
- Trees
- Shrubby
- Utility poles
- Signs
- Glare
- Other (specify) _____
- Unknown

11. Grade at parked position _____ +/- %

12. Estimated distance from parked position to impact

_____ m

13. Estimated speed at impact _____ +/- kmph

14. Grade at impact _____ +/- %

15. Estimated distance from impact to vehicle final rest

_____ m

Unknown = 999 Reference Items 11,12, 13, 14, 15



1. Case Number _____

VEHICLE IDENTIFICATION

2. VIN _____

3. Model Year _____

4. Vehicle Make (specify): _____

5. Vehicle Model (specify): _____

GLAZING

Location	Presence (check)	Status (select)	Clarity (select)	Tint (check)	Glazing Obstructions (specify if present)
Windshield		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
LF		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
RF		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
2 nd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
2 nd Right		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd Left		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
3 rd Right		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Left Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Right Backlight		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Roof		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		
Other (specify)		Fixed / Closed / Open / Partially Open / Unknown	Clear / Hazy / Very Dirty / Unknown		

TIRE DATA

6. Vehicle Manufacturer Recommended Tire Size _____

7. LF Tire Size _____

9. RF Tire Size _____

8. LR Tire Size _____

10. RR Tire Size _____

Seats / Head Restraint Data

Seat Position	Seat Type (Select from below)	Head Restraint (Check if available)	Head Restraint Adjustment (select)	NOTES:
Front Left			Full Down / Mid / Full Up	
Front Middle			Full Down / Mid / Full Up	
Front Right			Full Down / Mid / Full Up	
2 nd Left			Full Down / Mid / Full Up	
2 nd Middle			Full Down / Mid / Full Up	
2 nd Right			Full Down / Mid / Full Up	
3 rd Left			Full Down / Mid / Full Up	
3 rd Middle			Full Down / Mid / Full Up	
3 rd Right			Full Down / Mid / Full Up	

Seat Type codes:

- | | |
|---|--------------------------------------|
| 0 = No seat or seat folded down | 8 = Pedestal (i.e. column supported) |
| 1 = Bucket | 9 = Box mounted (i.e. van type) |
| 2 = Bucket w/ folding back | 10= Other seat type (specify) |
| 3 = Bench | 99= Unknown seat type |
| 4 = Bench with folding back cushions | |
| 5 = Bench w/ folding back | |
| 6 = Split bench w/ separate back cushions | |
| 7 = Split bench w/ separate folding back | |

VEHICLE MEASUREMENTS

Clearance Heights	Measurements (all from ground, and in centimeters)	NOTES
Beltline		
Top of trunk/tailgate		
Bottom of bumper		
Trailer hitch (if applicable)		
Undercarriage		
Sway bar		
Axle		
Differential		
Other (specify):		
Sensor Height (if equipped)		
Camera Height (if equipped)		



1. Case Number

PARKING AID PRESENCE

2. Type of backing/parking aid present

- OEM camera
- OEM ultrasonic/radar sensor
- OEM combination camera-ultrasonic/radar sensor
- OEM Fresnel lens
- OEM interior mirrors
- Aftermarket camera
- Aftermarket ultrasonic/radar sensor
- Aftermarket combination camera-ultrasonic radar sensor
- Aftermarket Fresnel lens
- Aftermarket interior mirrors
- Other (specify): _____

CAMERA INFORMATION

Specify field of view measurements on diagram

3. System make/model

4. Video monitor type

- None present
- LCD (color)
- CRT (black & white)
- Unknown

5. Video display size _____ cm
(Diagonal)

6. Camera location

- None present
- Bumper
- License plate
- Tailgate/Hatch/Trunk
- Other (specify): _____

7. Video image quality under scene lighting conditions

- None present
- Good
- Average
- Poor (specify): _____
- Unknown

8. Was the camera functioning properly

- None present
- Yes
- No, poor image quality due to glare
- No, poor image quality due to atmospheric conditions
- No, camera turned off
- No, camera inoperable
- Unknown

ULTRASONIC/RADAR SENSOR

Specify object detection range on diagram

9. System make/model

10. Auditory warning illumination

- No sensor present
- Yes
- No
- Unknown

11. Number of sensors _____

12. Sensor locations
(Select all that apply)

- No sensor present
- Left bumper
- Center bumper
- Right bumper
- License plate area
- Tailgate/Hatch/Trunk

13. Was warning system functioning properly

- No sensor present
- Yes, system alerted driver
- No, system did not alert driver
- No, system turned off
- No, system inoperable
- Unknown

14. Did driver react to warning

- No sensor present
- Yes
- No
- Unknown

15. Did driver report common false warnings

- No sensor present
- Yes
- No
- Unknown



DRIVER FORM

1. Case Number

DRIVER PROFILE

2. Driver's Age

99 = Unknown

3. Driver's Sex

- Male
- Female
- Unknown

4. Driver's Height

999 = Unknown

_____ cm

5. Driver's Weight

999 = Unknown

_____ kg

6. Driver eyewear worn

(Select all that apply)

- None
- Eyeglasses
- Sunglasses
- Contacts
- Unknown

7. Driver vision deficiency condition

(Select all that apply)

- None
- Near sighted
- Far sighted
- Astigmatism
- Other (specify): _____
- Unknown

8. Non motorist's relationship to driver

- No relationship
- Child
- Grandchild
- Sibling
- Neighbor
- Friend
- Other (specify): _____
- Unknown

DRIVER ACTIONS

9. Driver approach to vehicle for entry

- From left front
- From left
- From left rear
- From right rear
- From right front
- Circled vehicle
- Return trip (backing into driveway/lot)
- Other (specify): _____
- N/A
- Unknown

10. Driver entry interruption

(Select all that apply)

- Direct trip from building to vehicle
- Loaded items into vehicle
- Spoke with family
- Spoke with neighbors
- Spoke with contacted nonmotorist
- Return trip (backing into driveway/lot)
- Other (specify): _____
- N/A
- Unknown

11. Purpose of backing

- Leaving parking space in parking lot
- Backing onto roadway from driveway
- Entering parking space in parking lot
- Backing into driveway from roadway
- Other (specify): _____
- N/A
- Unknown

12. Where was driver going

Description:

13. Driver in a hurry

- Yes N/A
- No Unknown
- Unknown

14. How did driver check behind (rear area of vehicle) after vehicle entry

(Select all that apply)

- Did not look
- Checked mirrors
- Turned right and looked back
- Turned left and looked back
- Viewed Camera
- Listened for auditory/visual warning from system
- Other (specify): _____
- N/A Unknown

15. Estimated time between vehicle entry and start of backing

- 0-10 Seconds Over 60 Seconds
- 11-30 Seconds N/A
- 31-60 Seconds Unknown

16. What direction was the driver looking during backing maneuver
(Select all that apply)
- Straight ahead
 - Right
 - Left
 - Rearward
 - At object inside the car
 - At mirrors
 - Other (specify): _____
 - N/A
 - Unknown
17. Was the driver distracted during back up maneuver
(Select all that apply)
- No non-driving activities
 - External**
 - Looking at other vehicles
 - Looking at other non motorist
 - Looking at intended turn destination
 - External focus, not specified
 - Other external focus (specify): _____
 - Internal**
 - Looking at other occupant
 - Talking to passenger
 - Dialing phone
 - Talking on phone
 - Listening to radio/cd/portable playback device
 - Adjusting radio/cd player
 - Adjusting climate controls
 - Using a device/controls integral to vehicle (specify): _____
 - Reading/adjusting navigation system
 - Eating or drinking
 - Smoking related
 - Retrieving fallen object (specify): _____
 - Internal focus, not specified
 - Focused on other internal object (specify): _____
 - N/A
 - Unknown
18. Driver avoidance actions prior to impact
(Select all that apply)
- None
 - Braking
 - Steering left
 - Steering right
 - Accelerating
 - Other (specify): _____
 - N/A
 - Unknown

19. Did driver see struck non motorist prior to impact
(Select all that apply)
- No, never saw non motorist
 - Saw non motorist prior to entering vehicle
 - Saw non motorist after entering vehicle
 - Other (specify): _____
 - N/A
 - Unknown
20. Est time between start of backing and impact
- <2 or = 1 second
 - 2-5 seconds
 - 6-10 seconds
 - > 10 seconds
 - N/A
 - Unknown
21. Driver interior sightline obstructions
(Select all that apply)
- Pillar
 - Headrest
 - Cargo
 - Other occupant
 - Other (specify) _____
 - Unknown
 - None
22. Recent experience driving this vehicle
- More than 10 times the last three months
 - 6-10 times the last three months
 - 2-5 times the last three months
 - Less than 2 times the last three months
 - First time driving this vehicle
 - N/A
 - Unknown
23. Frequency of driving in this parking lot/driveway
- Daily
 - Weekly
 - Several times a month
 - Monthly
 - Rarely
 - First time in lot/driveway
 - N/A
 - Unknown
24. Driver Impairment
(Select all that apply)
- No drugs or alcohol present
 - Alcohol present (specify BAC): _____
 - Drugs present (specify): _____
 - Unknown
25. Source of alcohol/drug results
- Police reported
 - Medical record
 - Other (specify) _____
 - Not Tested
 - Unknown if tested



Non Motorist Form

1. Case Number

NON-MOTORIST PROFILE

2. Non-motorist's Age _____ Months
_____ Years
99 = Unknown

3. Non-motorist's Sex
 Male
 Female
 Unknown

4. Non-motorist's Height _____ cm
999 = Unknown

5. Non-motorist's Weight _____ kg
999 = Unknown

6. Medical outcome
 Not injured
 ER only
 Hospitalized 1-4 days
 Hospitalized 5 days or more
 Treatment later
 Fatal
 Unknown

7. Source of most severe injury
 Bumper
 Tire
 Undercarriage
 Other Specify: _____
 Ground
 N/A
 Unknown

8. Non-motorist impairment
(Select all that apply)
 No drugs or alcohol present
 Positive for alcohol (specify BAC): _____
 Positive for drugs (specify): _____
 Unknown

9. Source of alcohol/drug results
 Police reported
 Medical Report
 Other (specify) _____
 Not Tested
 Unknown if tested

NON-MOTORIST ACTIONS

10. Non-motorist attitude
 Standing
 Bending at waist
 Sitting
 Crouching
 Kneeling
 On skates/skateboard
 On bike/scooter
 Other (specify) _____
 Unknown

11. Non-motorist motion
 Not moving
 Walking slowly
 Walking rapidly
 Running or jogging
 Skipping/Hopping/Jumping
 Falling/Stumbling/Rising
 On skates/skateboard
 On bike/scooter
 Other (specify): _____
 Unknown

12. Non-motorist approach relative to rear of vehicle
 Stationary
 From left
 From right
 From behind
 Other (specify): _____
 Unknown

13. Non-motorist first avoidance action
 No avoidance actions
 Stopped
 Accelerated pace
 Ran away (along vehicle path)
 Jumped
 Turned away from vehicle
 Turned toward vehicle and braced
 Dove or fell away from vehicle
 Other (specify): _____
 Unknown

14. Non-motorist primary focus of attention
 Striking vehicle
 Play object
 Person
 Surrounding traffic
 Animal
 Handheld electronic (phone, MP3 player, etc.)
 Other Object (specify) _____
 Unknown

15. Were any other Non-motorists present?
(Select all that apply)
 Alone
 One adult present
 One other child present
 Multiple adults present
 Multiple children present
 Unknown

NON MOTORIST CLOTHING

NOTES:

- Specify Color, Fabric and Texture/Weight for outermost layer only
- Indicate "NONE" if applicable
- Available codes:

	<u>Colors</u>		<u>Fabrics</u>		<u>Textures</u>		<u>Weights</u>
Black	Charcoal gray		Natural		Soft		Heavy
Lt gray/silver	Brown		Synthetic		Slick		Medium
Gold/tan	Purple		Blend		Coarse		Light
Dark blue	Light blue						
Dark green	Light green						
Maroon	Red						
Orange	Yellow						
White	Other (specify)						

	Clothing	Color	Fabric	Texture	Weight
H E A D W E A R	Hat				
	Helmet				
	Hood				
	Other (specify): _____				
U P P E R B O D Y	Short Sleeve				
	Long Sleeve				
	Light Jacket				
	Heavy Jacket				
	Other (Specify): _____				
L O W E R B O D Y	Shorts				
	Pants				
	Shoes				
	Other (specify): _____				