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ON-SITE NOT IN TRAFFIC SURVEILLANCE BACK OVER INVESTIGATION

CASE NUMBER - IN07013
LOCATION - ILLINOIS
VEHICLE - 2006 CHRYSLER 300
CRASH DATE - March 2007

Submitted:

June 21, 2007
Revised: January 17, 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
Washington, D.C. 20590-0003

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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. *Supplementary Notes* On-site Not In Traffic Surveillance back over investigation involving a 2006 Chrysler 300 and a pedestrian.			
16. *Abstract* This report covers an on-site Not In Traffic Surveillance back over investigation involving a 2006 Chrysler 300 and a pedestrian. This incident is of special interest because the Chrysler was backing up and backed over a pedestrian (2-year-old, female), who sustained fatal injuries. The Chrysler's driver was transporting four passengers to church. The victim was sitting in the back left seat position. The Chrysler's driver stopped in front of the church and let the passenger's out of the vehicle. The back left passenger exited the left rear door and went around behind the Chrysler to cross the street. The driver began to back up and the vehicle's back bumper impacted the pedestrian, knocked her to the ground, and the Chrysler's right rear wheel passed over the pedestrian's head. The pedestrian was transported to a hospital where she died of her injuries later that day. The investigation determined that the pedestrian was well within the blind zone behind the Chrysler as the driver began to back up and could not be seen by the driver.			
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BACKGROUND IN07013

This incident was brought to NHTSA's attention on or before March 6, 2007 by an internet news service article. This incident involved a 2006 Chrysler 300 and a pedestrian. The incident occurred in March 2007, at 11:19 a.m., in Illinois and was investigated by the applicable city police department. The police competed a standard "Illinois Traffic Crash Report" and submitted a copy of the report to the state. This incident is of special interest because the Chrysler was backing up and backed over a pedestrian [2-year-old, female], who sustained fatal injuries. This contractor inspected the scene and Chrysler, and interviewed the Chrysler's driver on March 27, 2007. This report is based on the police crash report, scene and vehicle inspections, interviews with the Chrysler's driver and the investigating police officer, inspection of an exemplar Chrysler 300, and this contractor's evaluation of the evidence.

SUMMARY

The Chrysler's driver was transporting four passengers to church. The victim was sitting in the back left seat position. The Chrysler's driver stopped in front of the church and let the passenger's out of the vehicle. The back left passenger exited the left rear door and went around behind the Chrysler to cross the street. The driver checked her side view mirrors and then looked over her right shoulder out of the backlight and began to back up. The vehicle's back bumper impacted the pedestrian, knocked her to the ground, and the Chrysler's right rear wheel passed over the pedestrian's head. The pedestrian was transported by ground ambulance to a hospital and then transferred by air ambulance to a children's hospital. The pedestrian died of her injuries later that day. The investigation determined that the pedestrian was well within the blind zone behind the Chrysler as the driver began to back up and could not be seen by the driver.

CRASH CIRCUMSTANCES

Crash Environment: The trafficway on which the Chrysler was traveling was a two-lane, undivided, city street traversing in a north and south direction. The roadway was 8 meters (26.2 feet) in width and was bordered by barrier curbs. There was no centerline or other roadway markings. Parking was allowed on both sides of the street. The back over occurred in front of a church parking lot as people were arriving for noon church services. The church and church parking lot were located on the west side of the street. At the time of the incident the light condition was daylight, the atmospheric condition was clear and the roadway surface was dry bituminous with a positive 1.8% grade in the direction the Chrysler was backing. The site of the incident was urban residential. See the Scene Diagram at end of this report.

Figure 1: View southbound to police reported area of incident (arrow)

Pre-Crash: The Chrysler's driver was transporting her sister (i.e, the front right passenger) her sister's 2-year-old child (i.e., the back left passenger and victim) and two other children (i.e., the back center and back right passengers) to church. The Chrysler was initially southbound. The driver stopped approximately in the middle of the street north of the church and in front of the church parking lot (**Figure 1** above) to let the passengers out of the vehicle. The driver's intent was to then back the Chrysler northbound, turn right into the church parking lot and park the Chrysler. The front right passenger exited the right front door first. Then the back left passenger exited the left rear door. The back center and back right passengers exited the right rear door at about the same time. The driver indicated that she saw the back left passenger exit the left rear door. The back left passenger went to the rear of the Chrysler and then west across the back of the vehicle toward the parking lot. It is not known if she was walking or running. The incident occurred in the street as the Chrysler was backing up (**Figure 2**).

Figure 2: View northbound along path Chrysler was backing, arrows show police orange marks showing Chrysler's wheel positions (arrows) at final rest

Figure 3: Overview of back of Chrysler

Figure 4: Chrysler's right rear wheel and undercarriage

Crash: The Chrysler's driver stated that she thought that the back left passenger had "gone to her sister". The driver stated she shifted the vehicle into reverse, checked both of her side view mirrors, then looked over her right shoulder out of the backlight and began to back up. The driver stated she did not back far (the driver was unable to provide an estimate of the distance) and only a "couple of seconds" passed (she wouldn't/couldn't provide a specific time estimate) before she heard what she thought was the sound of a car door shutting and then felt something under the Chrysler. She said at the same time she heard a "scratching" sound under the car. Simultaneously people began to scream and the driver immediately stopped the car. Based on the available information, the center portion of the Chrysler's back bumper (**Figure 3**) most likely struck the child. The child was knocked to the ground. She fell in an westerly direction, which placed the child's head in the path of the Chrysler's right rear wheel. The right rear wheel (**Figure 4**) then passed over the child's head crushing her skull. It is also likely that

there was some contact to the child's body by the Chrysler's exhaust pipe, axle and differential; however, examination of these components showed no evidence of contact. The police crash report indicated that a deposit of blood, hair and some plastic beads where found "several inches" in front of the right rear tire. Based on this information, knowledge of the Chrysler's rear overhang, and the tire size, it was determined that the Chrysler traveled approximately 1.6 meters (5.3 feet) backward from impact to final rest. Based on the driver's statement that she backed for only a "couple of seconds" before the impact, and using a "normal" acceleration rate of 0.1g while backing yields the following range of distances to impact and speeds at impact for the indicated backing times:

- 1.5 seconds backing = 1.1 meters (3.6 feet) and 5.3 km.p.h. (3.3 m.p.h.)
- 2.0 seconds backing = 2.0 meters (6.4 feet) and 7.1 km.p.h. (4.4 m.p.h.)
- 2.5 seconds backing = 3.1 meters (10.1 feet) and 8.7 km.p.h. (5.4 m.p.h.)
- 3.0 seconds backing = 4.4 meters (14.5 feet) and 10.6 km.p.h. (6.6 m.p.h.)

Given the fact that the pedestrian's mother and the other two children got out on the right side of the Chrysler, it is reasonable to assume that the pedestrian would want to get around the back of the Chrysler as soon a possible to rejoin them and would not travel very far behind the vehicle before heading to the west side of the street. Therefore, the most likely range of times and distances to impact and speeds at impact are: 1.5 to 2.0 seconds, 1.1 meters (3.6 feet) to 2.0 meters (6.4 feet), and 5.3 km.p.h. (3.3 m.p.h.) to 7.1 km.p.h. (4.4 m.p.h.).

Post-Crash: A bystander moved the pedestrian from under the Chrysler and placed her on the roadway near the back right corner of the vehicle. The Chrysler driver's husband, who was standing near the front of the church when the incident occurred, immediately called 911. The pedestrian was transported from the scene to a local hospital by ground ambulance. The pedestrian was then transported to a children's hospital by air ambulance. The child died of her injuries later that day. It was reported that she sustained severe facial and head injuries.

CASE VEHICLE

The 2006 Chrysler 300 was a rear wheel drive, 4-door sedan (VIN: 2C3KA53G76H------) equipped with a 3.5L, V6 engine and automatic transmission. The Chrysler was equipped with after-market wheels with tires size: P265/35R22. The Chrysler's recommended tire size was: P215/65R17. The Chrysler's larger diameter wheels would raise the vehicle approximately 3 centimeters (1.2 inches) higher than the stock wheels. The vehicle was also equipped with after market tinting on the side windows and backlight. The tinting was very dark which darkened the view out of the backlight. The vehicle was not equipped with any backup/parking aid. The Chrysler's specification wheelbase was 305 centimeters (120.1 inches). The specification rear overhang was 110 centimeter (43.3 inches) and the specification overall length was 500 centimeters (196.9 inches). The distance from the ground to the bottom of the back bumper was 31 centimeters (12.2 inches).

There was no evidence of pedestrian contact to the Chrysler's back bumper. There was also no evidence of contact to any of the Chrysler's rear undercarriage components. Based on the available information and Collision Deformation Guidelines (CDC) for pedestrian impacts, a CDC was determined to be: **06-BCLN-1** (**180** degrees). The Chrysler was driven from the scene.

CASE VEHICLE DRIVER

The Chrysler's driver was a Black (non-Hispanic) 26-year-old female. She was 168 centimeters (66 inches) tall and weighed 84 kilograms (185 pounds). She indicated that she drives the Chrysler daily. She also indicated that she drives on the roadway where the incident occurred daily. The driver had no vision deficiency and was not wearing sunglasses at the time of the incident. The police crash report indicated that driver's condition was "normal".

CASE VEHICLE VISIBILITY STUDY

A visibility study was conducted during the Chrysler inspection in order to determine the nominal blind zone behind the Chrysler. The visibility zones of the side view mirrors and rearview mirror were also determined. In addition, an exemplar Chrysler 300 was used to resolve some issues related to visibility observations that were made looking over the center high-mounted brake lamp. The standard 71 centimeters (28 inches) tall target was used for the visibility observations. The Chrysler's driver initially assisted the SCI investigator in making the visibility observations. However, the driver had a tendency to move around and extend her body to look for the target instead of keeping a "normal" position and wait for the target to come into view as it was moved. Following some initial trials, the driver was thanked for her assistance and the SCI investigator completed other vehicle inspection tasks and then performed the visibility observations himself. All the visibility measurements reported below were determined with the SCI investigator serving as a surrogate driver. The Chrysler driver's eye height was 122 centimeters (48 inches) above the ground as she sat in the driver's seat. She had the driver's seat track adjusted to between the middle and full forward position, which was her normal seat position adjustment. The SCI investigator was 184 centimeters (72.4 inches) tall and his eye height was 131 centimeters above the ground as he sat in the driver's seat. The SCI investigator left the driver's seat adjusted to the same track position as the Chrysler's driver. Please refer to the Case Vehicle Nominal Visibility Diagram at the end of this report when reading the following discussion.

Figure 6: View through Chrysler's backlight from driver's seat

For the assessment of the blind zone behind the Chrysler, the target was positioned at the back of the Chrysler left of the center high-mounted brake lamp [i.e., in the gap between the brake lamp and the back left head restraint (**Figure 6**)] and moved rearward until the target came into the surrogate driver's view (**Figure 7** below). It was

Figure 7: Arrow shows location target first came into view while surrogate driver was looking over right shoulder through gap between center high-mounted brake lamp and back left head restraint.

necessary to move the target rearward from the back of the Chrysler 6.7 meters (22 feet) before the surrogate driver could see it. The target was then moved to the approximate centerline of the Chrysler. The brake lamp obstructed the surrogate driver's view of the target at this position. The target was then moved back to the left until it came into view around the left side of the brake lamp. The target had to be moved left of the centerline 0.5 meters (1.6 feet) before it came into view. The target was then moved an additional 0.5 meters (1.6 feet) to the left before it became obstructed by the back left head restraint. The target continued to be moved to the left and did not come back into view again due to left "C"-pillar. The target was then moved back to the Chrysler's approximate centerline and moved to the right until it came into view around the right side of the brake lamp. This distance was 1.3 meters (4.3 feet) right of the centerline. The target was then moved to the right an additional 1.5 meters (4.9 feet) before it became obstructed by the back right head restraint. The target continued to be moved to the right and did not come back into view due to the right "C"-pillar. When the target was placed behind the center high-mounted brake lamp on an exemplar Chrysler 300, it had to be moved rearward from the back of the vehicle 8.5 meters (27.9 feet) before it could be seen. In summary, for the surrogate driver looking over his right shoulder out of the backlight and through the gap between the center high-mounted brake lamp and either head restraint, the blind zone behind the Chrysler was 6.7 meters (22 feet) deep and extended laterally well beyond the right "C"-pillar. In addition, for all practical purposes, a driver looking out of the backlight over their right shoulder would not be able to see beyond the left "C"-pillar because the driver's head restraint blocks the view. Lastly, the beginning of the visibility zone located between the center high-mounted brake lamp and the back seat head restraints [i.e., 6.7 meters (22 feet) rear of the back of the Chrysler] was 1.4 meters (4.9 feet) wide on the right side of the center high-mounted brake lamp and 0.5 meters (1.6 feet) wide on the left side of the brake lamp. The beginning of the visibility zone located behind the center high-mounted brake lamp [i.e., 8.5 meters (27.9 feet) rearward of the back of the Chrysler] was 1.7 meters (5.6 feet) wide.

The target was also used to determine the side view mirror visibility zones. The target was first positioned an arbitrary distance of 3 meters (9.8 feet) rearward of the back bumper and in line with each side of the Chrysler. The target was then moved laterally away from the side of the vehicle until it went out of the surrogate driver's view as he sat in the driver's seat looking through the subject mirror. For the left side view mirror, the target had to be moved to the left 1.5 meters (4.9 feet) before the surrogate driver could no longer see it in the mirror. For the right side view mirror, the target had to be moved to the right 1.2 meters (3.9 feet) before the surrogate driver could not longer see it in the mirror.

Figure 8: View through Chrysler's rearview mirror

The view through the rearview mirror (**Figure 8**) was assessed in a similar manner as the blind zone behind the Chrysler. The surrogate driver had to move the target rearward 7.5 meters (24.6 feet) from the back of the Chrysler before the target came into view in either gap between the center high-mounted brake lamp and the back seat head restraints. The target was then moved to the left from the Chrysler's approximate centerline 1.7 meters (5.6 feet) before it went out of view due to the left head restraint. The target was then moved to the right from the approximate centerline 1.3 meters (4.3 feet) before it went out of view due to the right head restraint. The target remained out of view due the head restraints. When the target was placed behind the center high-mounted brake lamp on an exemplar Chrysler 300, it had to be moved rearward from the back of the vehicle 9.2 meters (30.2 feet) before it came into view.

The investigation and reconstruction determined that the pedestrian was behind and most likely within approximately 2 meters (6.4 feet) of the back of the Chrysler when the driver began to back up. The visibility study showed that once the pedestrian was in this area, she was well within the Chrysler's rear blind zone and the driver would be unable to see her. Given the pedestrian's height, she would have had to be in excess of approximately 5.6 meters (18.3 feet) behind the Chrysler and in the gap between the center high-mounted brake lamp and either back seat head restraint before the driver would have had her first opportunity to see the pedestrian.

PEDESTRIAN

The pedestrian was a 2-year-old, Black (non-Hispanic) female. She was 79 centimeters (31 inches) tall and weighted 12.7 kilograms (28 pounds). The pedestrian was reportedly wearing a long sleeve shirt, light and dark blue colored jacket, blue jeans and black leather shoes.

PEDESTRIAN INJURIES

The pedestrian was transported from the scene to a local hospital by ground ambulance and then transferred to a children's hospital by air ambulance. The pedestrian died of her injuries later that day. The table below shows the pedestrian's injuries and injury mechanisms.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source (Mechanism)	Source Confidence	Source of Injury Data
1	Fracture skull, not further specified	moderate 150400.2,9	Exterior of other motor vehicle: right rear tire	Certain	Police Crash Report

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source (Mechanism)	Source Confidence	Source of Injury Data
2	Traumatic {severe} brain injury, not further specified	unknown 115999.7,0	Exterior of other motor vehicle: right rear tire	Certain	Police Crash Report
3	Injury, severe, face, not further specified	unknown 215999.7,0	Exterior of other motor vehicle: right rear tire	Certain	Police Crash Report

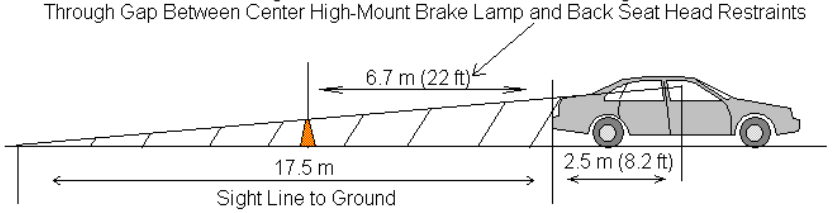
IN07013

Nominal Visibilty Diagram
Case Vehicle = 2006 Chrysler 300

Surrogate Driver's Eye Height From Ground = 131 cm (51.6 in)

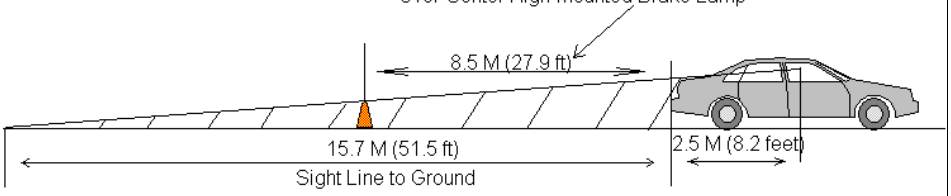
= Chrysler Blind Zones
= Side View Mirrors Visibility Zones
= 71 cm (28 in) High Target

1. Distance Back of Chrysler
To Point a 71 cm (28 in) High Reference Target
Comes Into Surrogate Driver's View as He Looks Over Right Shoulder
Through Gap Between Center High-Mount Brake Lamp and Back Seat Head Restraints



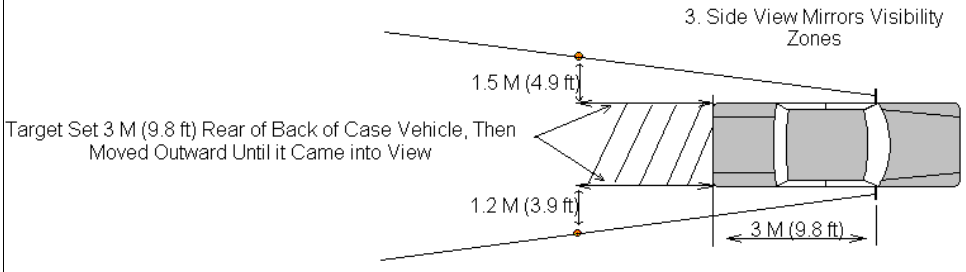
Note: Beginning of Visibility Zone In Gap Between
Center High-Mounted Brake Lamp and Back Seat Head Restraints
is 0.5 m (1.6 ft) Wide on Left Side of Brake Lamp and
1.5 m (4.9 ft) Wide on Right Side of Brake Lamp

2. Distance Back of an Exemplar Chrysler 300
To Point a 71 cm (28 in) High Reference Target
Comes Into Surrogate Driver's View as He Looks Over Right Shoulder
Over Center High-Mounted Brake Lamp

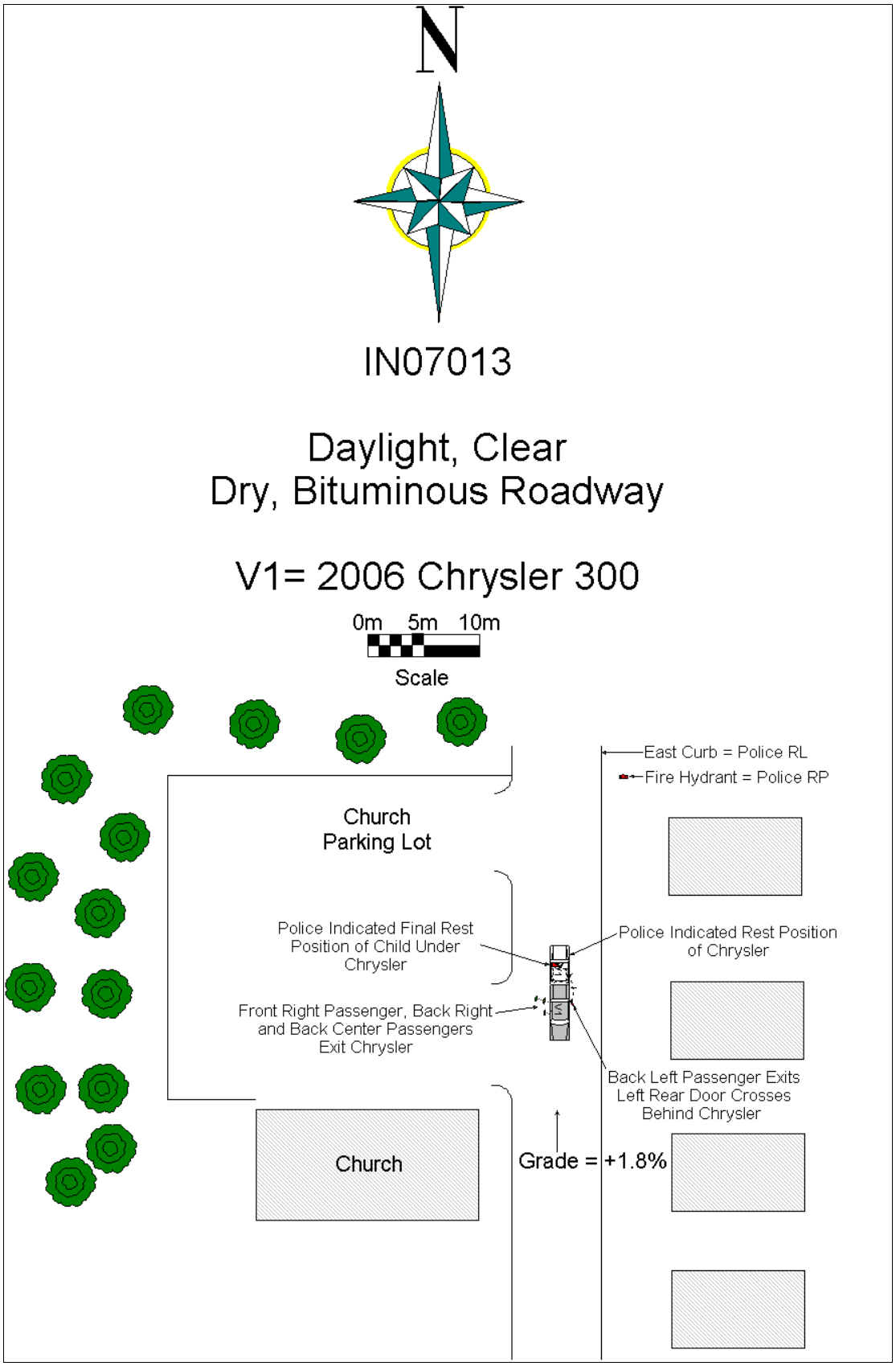


Note: Beginning of Visibility Zone Behind Center High-Mounted
Brake Lamp was 1.7 M (5.6 ft) Wide

3. Side View Mirrors Visibility
Zones



Note: When Viewed in Rearview Mirror Through Gap Between Center High-Mounted
Brake Lamp and Back Seat Head Restraints, Target had to be Moved Rearward
from Back of Vehicle 7.5 M (24.6 ft) Before it Came into View. When Viewed in Rearview
Mirror Over High-Mounted Brake Lamp on Exemplar Chrysler 300, Target Had to
be Moved Rearward 9.2 M (30.2 ft) before it Came into View.


N
IN07013
Daylight, Clear
Dry, Bituminous Roadway
V1= 2006 Chrysler 300
0m 5m 10m
Scale
East Curb = Police RL
Fire Hydrant = Police RP
Church
Parking Lot
Police Indicated Final Rest
Position of Child Under
Chrysler
Police Indicated Rest Position
of Chrysler
Front Right Passenger, Back Right
and Back Center Passengers
Exit Chrysler
Back Left Passenger Exits
Left Rear Door Crosses
Behind Chrysler
Church
Grade = +1.8%

Not Applicable ☐

Reset Values | Print Forms

U.S. Department of Transportation
National Highway Traffic Safety Administration

SCENE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 1 3

IDENTIFICATION

2. Date of Crash 0 3 / x x / 0 7

3. Time of Crash 1 1 1 9

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
- ( ) Shrubbery
- ( ) 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
- ( ) Shrubbery
- ( ) Utility poles
- ( ) Signs
- ( ) Glare
- ( ) Other (specify) _____
- ( ) Unknown

11. Grade at parked position (+)/ - + 0 2 %

12. Estimated distance from parked position to impact

0 0 1 . 6 m

13. Estimated speed at impact 0 0 6 kmph

14. Grade at impact (+)/ - + 0 2 %

15. Estimated distance from impact to vehicle final rest

0 0 1 . 6 m

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

Not Applicable ☐

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

VEHICLE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number I N 0 7 0 1 3

VEHICLE IDENTIFICATION

2. VIN 2 C 3 K A 5 3 G 7 6 H X X X X X X

3. Model Year 2 0 0 6

4. Vehicle Make (specify): Chrysler

5. Vehicle Model (specify): 300

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	☑	
2nd Left	☑	☐ Fixed / ☑ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☑	
2nd Right	☑	☐ Fixed / ☑ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☑ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☑	
3rd Left	☐	☐ Fixed / ☐ Closed / ☐ Open / ☐ Partially Open / ☐ Unknown	☐ Clear / ☐ Hazy / ☐ Very Dirty / ☐ Unknown	☐	
3rd 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 P215/65R17

7. LF Tire Size P265/35R22

8. LR Tire Size P265/35R22

9. RF Tire Size P265/35R22

10. RR Tire Size P265/35R22

Seats / Head Restraint Data

Seat Position	Seat Type (Select from below)	Head Restraint (Check if available)	Head Restraint Adjustment (select)	NOTES:
Front Left	1	☑	☑ Full Down / ☐ Mid / ☐ Full Up	
Front Middle	0	☐	☐ Full Down / ☐ Mid / ☐ Full Up	
Front Right	1	☑	☐ Full Down / ☑ Mid / ☐ Full Up	
2nd Left	3	☑	☐ Full Down / ☐ Mid / ☑ Full Up	Second row left and right are integral head restraints
2nd Middle	3	☐	☐ Full Down / ☐ Mid / ☐ Full Up	
2nd Right	3	☐	☐ Full Down / ☐ Mid / ☑ Full Up	
3rd Left		☐	☐ Full Down / ☐ Mid / ☐ Full Up	
3rd Middle		☐	☐ Full Down / ☐ Mid / ☐ Full Up	
3rd Right		☐	☐ Full Down / ☐ Mid / ☐ Full Up	

Seat Type codes:

0 = No seat or seat folded down
1 = Bucket
2 = Bucket w/ folding back
3 = Bench
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
8 = Pedestal (i.e. column supported)
9 = Box mounted (i.e. van type)
10= Other seat type (specify)
99= Unknown seat type

VEHICLE MEASUREMENTS

Clearance Heights		Measurements (all from ground, and in centimeters	NOTES
Beltline		107	
Top of trunk/tailgate		109	
Bottom of bumper		31	
Trailer hitch (if applicable)		N/A	
Undercarriage			
	Sway bar	N/A	
	Axle	24	
	Differential	26	
	Other (specify): Ex pipe	23	
Sensor Height (if equipped)		N/A	
Camera Height (if equipped)		N/A	

Not Applicable ☑

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

Back Up / Parking Aid Form

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 1 3

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

No Driver Present ☐

Reset Values

U.S. Department of Transportation
National Highway Traffic Safety Administration

DRIVER FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 1 3

DRIVER PROFILE

2. Driver's Age 26
99 = Unknown

3. Driver's Sex
- ○ Male
- ◉ Female
- ○ Unknown

4. Driver's Height 168 cm
999 = Unknown

5. Driver's Weight 084 kg
999 = Unknown

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): Niece
- ○ 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): Backing into parking lot
- ○ N/A
- ○ Unknown

12. Where was driver going
Description:

Driver backed up vehicle to enter parking lot and go to church.

13. Driver in a hurry
- ○ Yes
- ◉ No
- ○ N/A
- ○ 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
- ○ 11-30 Seconds
- ○ 31-60 Seconds
- ○ Over 60 Seconds
- ◉ N/A
- ○ 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): Saw NM after NM exited veh
- ○ 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) CHMSL
- ○ 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

Not Applicable ☐

U.S. Department of Transportation
National Highway Traffic Safety Administration

Non Motorist Form

Reset Values

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number
I N 0 7 0 1 3

NON-MOTORIST PROFILE

2. Non-motorist's Age — 0 2 ○ Months ◉ Years
99 = Unknown

3. Non-motorist's Sex
○ Male
◉ Female
○ Unknown

4. Non-motorist's Height — 0 7 9 cm
999 = Unknown

5. Non-motorist's Weight — 0 1 3 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:

Colors		***Fabrics***	***Textures***	***Weights***
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)			
Pink				

	Clothing	Color	Fabric	Texture	Weight
HEADWEAR	Hat				
	Helmet				
	Hood				
	Other (specify): _____				
UPPER BODY	Short Sleeve				
	Long Sleeve	Unknown	Natural	Soft	Light
	Light Jacket	Dark blue	Unknown	Soft	Light
	Heavy Jacket				
	Other (Specify): _____				
LOWER BODY	Shorts				
	Pants	Light blue	Natural	Soft	Medium
	Shoes	Black	Natural	Slick	Light
	Other (specify): _____				