Remote Not In Traffic Surveillance Back Over Investigation
Dynamic Science, Inc. / Case Number: DS07023
1991 Chevrolet Suburban
California
January 2007

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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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16. Abstract

This single vehicle incident occurred in January 2007 at 1335 hours. The case vehicle is a 1991 Chevrolet Suburban. The incident took place in the driveway of a private residence. The 25-year-old male driver of the case vehicle entered the vehicle from the left side. He was not aware that his son, a 21-month-old male, was outside of the house. A witness saw the driver begin backing his vehicle down the driveway. The witness saw the child was standing behind the vehicle and began yelling for the driver to stop. The driver was unable to see the child due to the blind zone behind his vehicle. The rear bumper of the Suburban struck the child and knocked him to the ground. The left rear tire struck the head of the child and he sustained a head injury.

The driver heard his neighbor yelling. The driver stopped the vehicle immediately and opened the driver's door. He then saw the child on the ground next to the vehicle. EMS personnel responding to the scene indicated that the child sustained several contusions to the back of his head. The child was airlifted to an area trauma center in critical condition. He was later transferred to an area children's hospital. He was hospitalized for two days and then released.

17. Key Words	18. Distribution Statement
Not in Traffic Surveillance (NITS), non-motorist, back over, serious injury	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No of pages	22. Price

Dynamic Science, Inc.
Crash Investigation
Case Number: DS07023

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BACKGROUND

This remote Not In Traffic Surveillance (NITS) Back Over Investigation was initiated in response to an on-line news article about a 21-month-old male injured in a back over incident. DSI was notified of the incident on January 25, 2007. There was not enough information in the report to contact the driver. The investigating police agency was located and a police report was requested. Some preliminary information was received in March 2007. The police report was received on April 12, 2007. Efforts were undertaken to contact the driver. The driver was contacted and interviewed on May 21, 2007. The case vehicle still belonged to the driver, but was being used by another person in another state. DSI was assigned the case on May 22, 2007. According to the investigating police agency, this incident would not be reported to the state because it occurred on private property and did not involved a fatal injury. A copy of the report is kept at their facility for their records.

Figure 1. Case vehicle, 1991 Chevrolet Suburban

The following information was obtained from the police report, copies of on-scene photographs, a witness interview and the driver interview.

This single vehicle incident occurred in January 2007 at 1335 hours. The case vehicle is a 1991 Chevrolet Suburban (see Figure 1). The crash took place in the driveway of a private residence. The 25-year-old male driver of the case vehicle entered the vehicle from the left side. He was not aware that his son, a 21-month-old male, was outside of the house. A witness saw the driver begin backing his vehicle down the driveway. The witness saw the child was standing behind the vehicle and began yelling for the driver to stop. The driver was unable to see the child due to the blind zone behind his vehicle. The distance from the parked position to impact was smaller than the blind zone. The rear bumper of the Suburban struck the child and knocked him to the ground. The left rear tire struck the head of the child and he sustained a head injury.

The driver heard his neighbor yelling. The driver stopped the vehicle immediately and opened the driver's door. He then saw the child on the ground next to the vehicle. EMS personnel responding to the scene indicated that the child sustained several contusions to the back of his head. The child was airlifted to an area trauma center in critical condition. He was later transferred to an area children's hospital. He was hospitalized for two days and then released.

SUMMARY

Incident Site

This incident took place in the driveway of a private residence. The incident took place at 1335 hours. At the time of the incident, there were no adverse weather conditions and the asphalt driveway surface was dry. The temperature was 16 degrees C (61 degrees F) at 0753 hours at the nearest reporting station. The driveway intersects a two-lane, north/south asphalt urban street. The street is bordered by concrete curbs, gutters and sidewalks. The driveway was on the west side of the street. It was bordered to the east by a sidewalk and to the north/south by grass lawns. The residence is north of the driveway.

Figure 2. Rear of 1991 Chevrolet Suburban, crash scene (looking west)

Pre-Crash

The 1991 Chevrolet Suburban was initially parked in the driveway facing west. It is estimated that the vehicle was parked 3.0-4.5 m (10.0-15.0 ft) from the point of impact. The driver of the case vehicle entered the vehicle from the front left side. He was not aware that his son, the 21-month-old male, was outside of the house. The 21-month-old child was 76 cm (30 in) tall and weight 13 kg (28 lbs). According to the witness, the child had approached the vehicle from the right. He was walking across the grass and then around the back of the Suburban. Assuming a walking velocity of 0.8 mps (2.8 fps), it would have taken the child approximately12 seconds to move from the front of the residence to behind the Suburban.

The witness saw the driver begin backing his vehicle down the driveway and began yelling for the driver to stop. Based on an acceleration rate of 3.2 ft/sec/sec, the case vehicle would have been traveling at most between 5.4 mph (8.7 km/h) and 6.7 mph (10.8 km/h) at the time of impact. The driver was unable to see the child due to the blind zone behind his vehicle. The distance from the parked position to impact was smaller than the blind zone.

Crash

The left rear bumper of the Suburban struck the child and knocked him to the ground. The left rear tire struck the head of the child and he sustained a head injury. The witness described the contact as the tire pinching the child's head and his body forced out from underneath the vehicle to the side of the driveway.

Post-Crash

The driver heard his neighbor yelling. The driver stopped the vehicle after traveling 2.9 m (9.7 ft) and opened the driver's door. The vehicle came to rest with the rear bumper just over the north/south sidewalk. As the driver exited the vehicle, he then saw the child on the ground next to the vehicle. EMS personnel responding to the scene indicated that the child sustained several contusions to the back of his head. The child was airlifted to an area trauma center in critical condition. He was later transferred to an area children's hospital. The police reported that the child sustained a "severe injury". He was hospitalized for two days and then released.

Figure 3. Chevrolet Suburban at final rest

Figure 4. Left rear tire and bumper of Chevrolet Suburban at final rest

VEHICLE DATA - 1991 Chevrolet Suburban

The 1991 Chevrolet Suburban was identified by license plate number on the police report. The Suburban was a four-door 9-passenger vehicle that was equipped with 5.7 liter, eight-cylinder engine, a four-speed automatic transmission, disc brakes with ABS and rear wheel drive. The vehicle was equipped with Hankook Ventus H101 tires
.

Position	Measured Pressure	Measured Tread Depth	Restricted	Damage
LF	Unknown	Unknown	No	None
RF	Unknown	Unknown	No	None
LR	Unknown	Unknown	No	None
RR	Unknown	Unknown	No	None

Vehicle Damage - 1991 Chevrolet Suburban

There was no damage to the Chevrolet Suburban and no reports of any contact evidence. The Collision Deformation Classifications (CDC) for the impact with the non-motorist was 06B9LU1.

Figure 5. Right side, Chevrolet Suburban

Vehicle Dimensions

Dimensions obtained from Canadian vehicle specifications and an exemplar vehicle. Seated eye height was estimated using a lot person who was approximately 173 cm (68 in) tall.

Ground to belt line:	127.0 cm (50.0 in)
Ground to top of trunk/tailgate:	124.0 cm (48.8 in)
Ground to bottom of rear bumper:	50.0 cm (19.7 in)
Driver's seated eye height:	153.0 cm (60.2 in) estimated
Eye position (seated forward facing):	15.0 cm (5.9 in) estimated
Overall vehicle height:	183.0 cm (72.0 in)
Overall vehicle width:	202.0 cm (79.5 in)
Overall vehicle length:	557.0 cm (219.3 in)
Rear overhang:	141.0 cm (55.5 in)
Track width:	163.0 cm (64.1 in)
Longitudinal distance between the backlight top molding and front door latch pillar:	290.0 cm (114.2 in)

Vehicle Sight Distances

A visibility study was conducted in order to determine the nominal blind zone behind the vehicle as well as the nominal blind zone of both side view mirrors. Measurements were taken using a 1995 GMC C1500 Suburban exemplary vehicle. The standard 71.0 cm (28.0 in) high target was used to obtain the measurements. The measurements were taken on a paved level surface.

The driver's overall height was 173.0 cm (68.0 in). The driver's seated eye height when measured from the seat bottom was 77.0 cm (30.3 in) and when measured from the ground was 153.0 cm (60.2 in). The SCI investigator was able to duplicate the driver's seated eye height by measuring his own eye height from the seat bottom, as well as from the ground. The seat track was set in the middle position. The seat back was slightly reclined.

The initial set of measurements were taken as if the driver were looking over his right shoulder through the backlight. The target was moved rearward from the back bumper along the Suburban's centerline until it became visible to the investigator. The point at which the target became visible to the investigator measured 7.20 m (23.62 ft) rearward of the back bumper. This measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visibility zone that could be viewed through the backlight. The point at which the roadway surface became visible to the investigator measured 14.44 m (47.38 ft) rearward of the back bumper.

Another set of measurements were taken to simulate the driver using the rear view mirror to look through the backlight. The target was moved rearward from the back bumper along the Suburban's centerline until it became visible to the investigator. The point at which the target became visible to the investigator measured 7.20 m (23.62 ft) rearward of the back bumper. This measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visibility zone that could be viewed through the backlight. The point at which the roadway surface became visible to the investigator measured 14.44 m (47.38 ft) rearward of the back bumper.

Since the SCI investigator was using an exemplar vehicle, he adjusted the side mirrors appropriately for the driver's seated eye height. With the SCI investigator seated, the side views were examined. The target was placed at the right side of the back bumper. The target was moved from the side of the vehicle laterally to the right until the target became visible through the right side view mirror. The target was then moved laterally to the right to the point where the target was no longer visible. These measurements resulted in a visibility zone which could be viewed through the side view mirror. This process was repeated on the left side of the vehicle. The area between the left and right visibility zones resulted in a blind zone. At 7.20 m (23.62 ft) rearward of the rear bumper, the blind zone was approximately 1.61 m (5.28 ft) in width. At 19.0 m (62.34 ft) rearward of the back bumper, the blind zone was approximately 100 cm (39.37 in) in width. There was insufficient working space to determine at what distance from the vehicle the right and left visibility zones would meet.

The Suburban was configured with double doors for the rear hatch. Each door was configured with one window. The doors met along the vehicle's longitudinal center. The left and right backlights were separated by 15.0 cm (5.9 in) of window frame material, which resulted in a blind zone of 15.0 cm (5.9 in) at the vehicle's rear bumper. The blind zone became progressively narrower as the target was moved further away from the rear bumper.

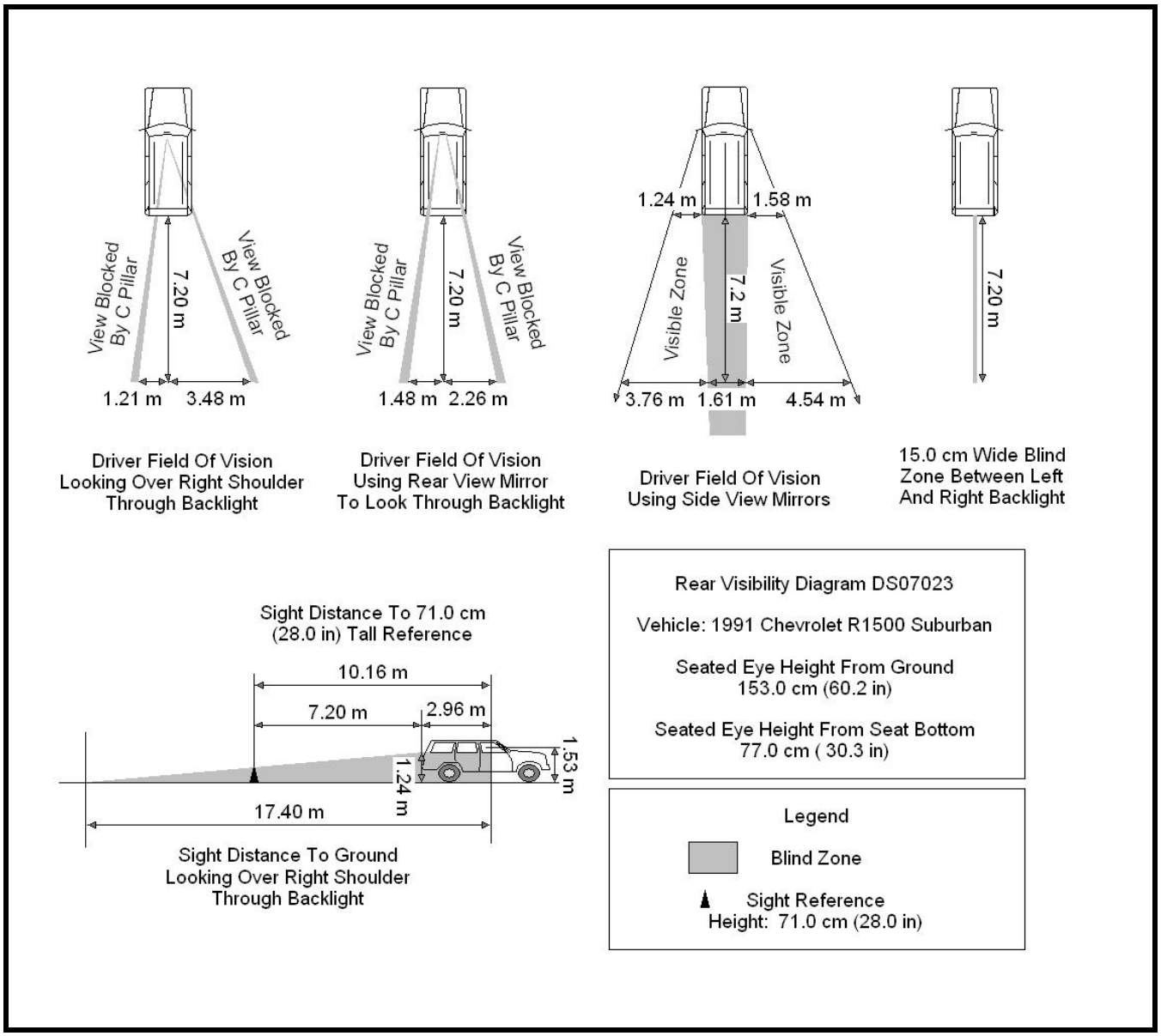


Figure 6. Nominal Sight Distances

Parking Aids/Sensors

The case vehicle was not equipped with any parking aids or backing up sensor/video technology.

Interior Damage - 1991 Chevrolet Suburban
There was no interior damage.

OCCUPANT DEMOGRAPHICS - 1991 Chevrolet Suburban

	Driver
Age/Sex:	25/Male
Seated Position:	Front left
Seat Type:	Bucket seat
Height:	173 cm (68 in)
Weight:	88 kg (195 lbs)
Occupation:	Unknown
Pre-existing Medical Condition:	None noted
Alcohol/Drug Involvement:	None
Driving Experience:	8 years
Body Posture:	Normal, upright
Hand Position:	Unknown
Foot Position:	Right foot on brake, left on floor board
Restraint Usage:	Lap and shoulder belt available, used

NON MOTORIST DEMOGRAPHICS

Age/Sex:	21 month/Male
Height:	76 cm (30 in)
Weight:	13 kg (28 lbs)
Pre-existing Medical Condition:	None noted
Alcohol/Drug Involvement:	None
Body Posture:	Upright, walking

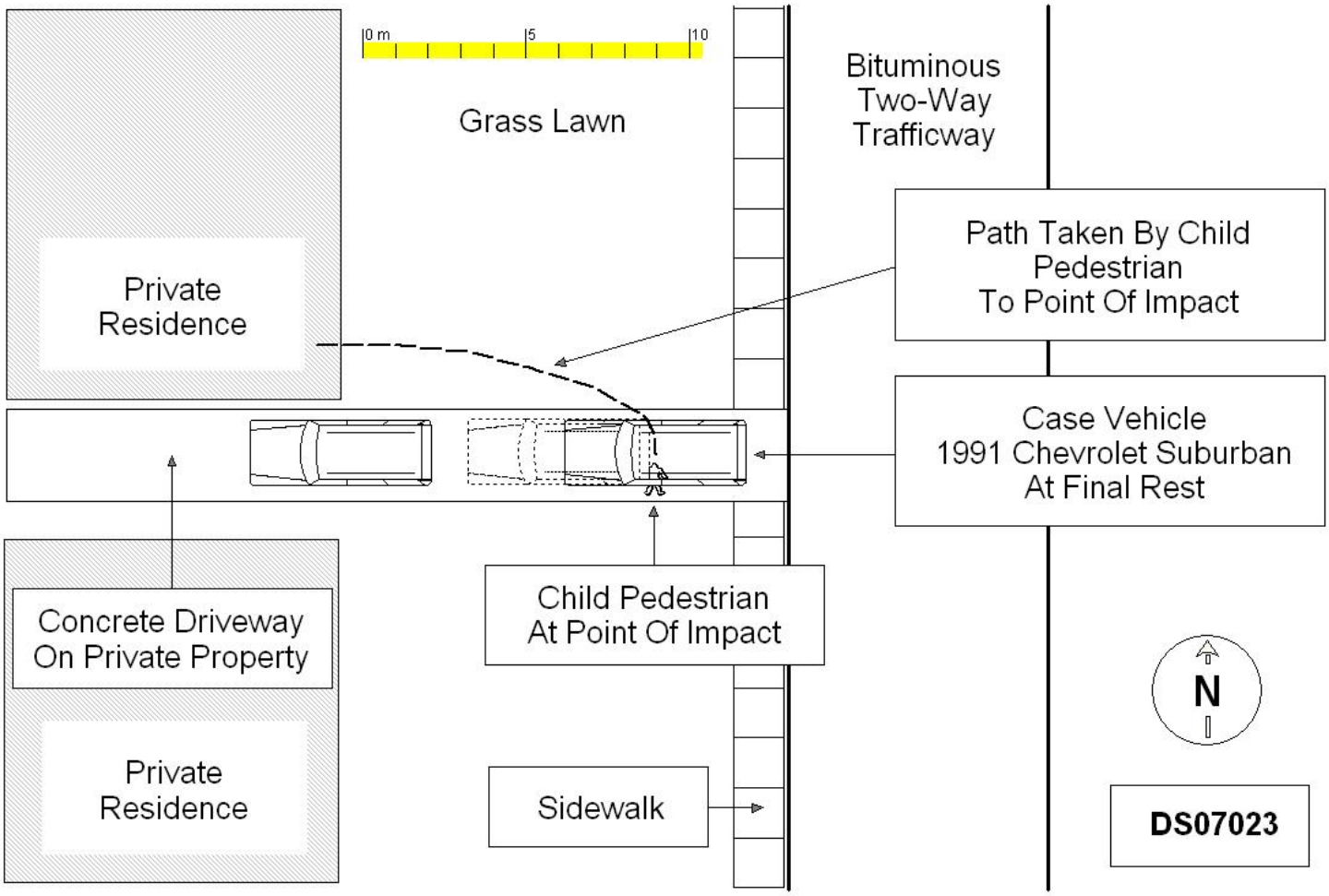
INJURIES - 1991 Chevrolet Suburban

Driver: Not injured.

Pedestrian/Non-Motorist: Injuries obtained from interviewee and police report.

Injury	OIC Code	Injury Mechanism	Confidence Level
Blunt head trauma	115099.7,0	Left rear tire	Probable
Multiple contusions to head	190402.1,9	Left rear tire	Probable

Attachment 1. Scene Diagram



Attachment 2. Field Data Forms

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

D S 0 7 0 2 3

IDENTIFICATION

2. Date of Crash 0 1 / X X / 0 7

3. Time of Crash 1 3 3 5

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 0 %

12. Estimated distance from parked position to impact

0 0 4 . 5 m

13. Estimated speed at impact 0 1 0 kmph

14. Grade at impact +/ - 0 0 %

15. Estimated distance from impact to vehicle final rest

0 0 2 . 9 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 D S 0 7 0 2 3

VEHICLE IDENTIFICATION

2. VIN 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9

3. Model Year 1 9 9 1

4. Vehicle Make (specify): CHEVROLET

5. Vehicle Model (specify): SUBURBAN

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 UNKNOWN

7. LF Tire Size UNKNOWN

8. LR Tire Size UNKNOWN

9. RF Tire Size UNKNOWN

10. RR Tire Size UNKNOWN

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	99	☐	☐ ☐ ☐ Full Down / Mid / Full Up	
2nd Middle	99	☐	☐ ☐ ☐ Full Down / Mid / Full Up	
2nd Right	99	☐	☐ ☐ ☐ Full Down / Mid / Full Up	
3rd Left	0	☐	☐ ☐ ☐ Full Down / Mid / Full Up	
3rd Middle	0	☐	☐ ☐ ☐ Full Down / Mid / Full Up	
3rd Right	0	☐	☐ ☐ ☐ 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		127	
Top of trunk/tailgate		124	
Bottom of bumper		50	
Trailer hitch (if applicable)		N/A	
Undercarriage			
	Sway bar	N/A	
	Axle	N/A	
	Differential	N/A	
	Other (specify): _____	N/A	
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

D S 0 7 0 2 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

D S 0 7 0 2 3

DRIVER PROFILE

2. Driver's Age 2 5
   99 = Unknown

3. Driver's Sex
   - (•) Male
   - ( ) Female
   - ( ) Unknown

4. Driver's Height 1 7 3 cm
   999 = Unknown

5. Driver's Weight 0 8 8 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): _____
   - ( ) 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:

    UNKNOWN

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): _____
- ○ 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

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
D S 0 7 0 2 3

NON-MOTORIST PROFILE

2. Non-motorist's Age — 2 1 ◉ Months ○ Years
99 = Unknown

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

4. Non-motorist's Height — 0 7 6 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)			

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