CRASH DATA RESEARCH CENTER

Calspan Corporation
Buffalo, NY 14225

NOT-IN-TRAFFIC SURVEILLANCE

CALSPAN REMOTE POWER WINDOW INVESTIGATION

SCI CASE NO.: CA 07-019

VEHICLE: 1998 TOYOTA CAMRY

LOCATION: VIRGINIA

INCIDENT DATE: JULY 2007

Contract No. DTNH22-07-C-00043

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

DISCLAIMER

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no responsibility for the contents or use thereof.

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.

The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are 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 STANDARD TITLE PAGE

1. Report No. CA07-019	*2. Government Accession No.*	*3. Recipient's Catalog No.*	
4. Title and Subtitle Not-In-Traffic Surveillance Calspan Remote Power Window Investigation Vehicle: 1998 Toyota Camry Location: Virginia		*5. Report Date*: November 2007 *6. Performing Organization Code*	
7. Author(s) Crash Data Research Center		*8. Performing Organization Report No.*	
9. Performing Organization Name and Address Crash Data Research Center Calspan Corporation P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* C00500.0000.0026 *11. Contract or Grant No.* DTNH22-07-C-00043	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Washington, D.C. 20590		*13. Type of Report and Period Covered* Technical Report Crash Date: July 2007 *14. Sponsoring Agency Code*	
15. Supplementary Note This remote investigation focused on the power window switch configuration and the closing force of the rear door windows of a 1998 Toyota Camry.			
16. Abstract This remote investigation focused on the power window switch configuration and the closing force of the rear door windows of a 1998 Toyota Camry. A 2-year old male seated in the rear right position of the vehicle extended his head out of the window opening as the 25-year old female driver closed the window without knowledge of the child's position. The child's neck was trapped between the window and the top of the window frame which resulted in police reported head and neck injuries. The child was transported by helicopter to a regional pediatric trauma center where he was admitted in critical condition. Although his specific injuries are unknown, the child did survive and recovered from his injuries.			
17. Key Words Not-In-Traffic Surveillance Child Injury Power Window		*18. Distribution Statement* General Public	
19. Security Classif. (of this report) Unclassified	*20. Security Classif. (of this page)* Unclassified	*21. No. of Pages* 14	*22. Price*

TABLE OF CONTENTS

NOT-IN-TRAFFIC SURVEILLANCE
CALSPAN REMOTE POWER WINDOW INVESTIGATION
SCI CASE NO.: CA 07-019
VEHICLE: 1998 TOYOTA CAMRY
LOCATION: VIRGINIA
INCIDENT DATE: JULY 2007

BACKGROUND

This remote investigation focused on the power window switch configuration and the closing force of the rear door windows of a 1998 Toyota Camry **(Figure 1)**. A 2-year old male seated in the rear right position of the vehicle extended his head out of the window opening as the 25-year old female driver closed the window without knowledge of the child's position. The child's neck was trapped between the window and the top of the window frame which resulted in police reported head and neck injuries. The child was transported by helicopter to a regional pediatric trauma center where he was admitted in critical condition. Although his specific injuries are unknown, the child did survive and recovered from his injuries.

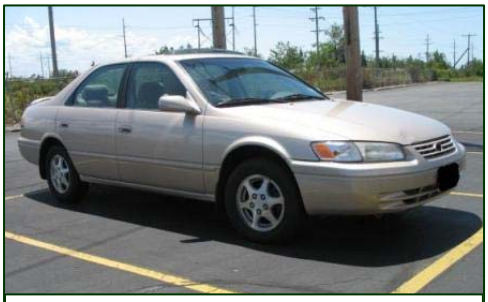

Figure 1. Exemplar 1998 Toyota Camry

This incident was identified by NHTSA through the news media and forwarded details of the incident to the Calspan Special Crash Investigations (SCI) team for follow-up on July 11, 2007. The SCI team contacted the investigating police agency and obtained verbal information relating to the incident from the Public Information Officer. The investigating police agency reported this incident as an offense involving a juvenile; therefore they would not authorize the release of the report or provide the names of the involved parties. This case was forwarded to the State Child Protective Services for disposition. This police report will not be forwarded to the state crash database. The police report was viewed in person by a NHTSA staff member that was allowed to hand-copy the facts contained within the report. Without names, interviews and medical records could not be obtained for this investigation. An exemplar vehicle was used to determine the closing force of the power windows under various test conditions. The results of these tests are discussed in detail in this report.

SUMMARY

Incident Site

This incident occurred in a parking lot of a grocery store during daylight hours. The asphalt surfaced parking lot consisted of driving lanes and painted parking spaces within the lot. At the time of the incident, the temperature was 26.7 degrees C (80.1 degrees F) with overcast skies, a wind speed of 24 km/h (15 mph) with 56 percent humidity.

Vehicle Data

This power window incident involved a 1998 Toyota Camry, four-door sedan. The vehicle was identified by Vehicle Identification Number 4T1BG22K5WU (production number deleted). The Camry was powered by a 2.2 liter 4-cylinder engine that was linked to a 5-speed manual transmission with a console mounted shifter. The interior was equipped with front bucket seats and a three-passenger rear bench seat with forward folding seat backs. Standard features included power windows and power door locks with the master control switch panel located at the forward aspect of the driver's door armrest. Each window and door had separate switches.

Incident

Pre-Incident

The vehicle was occupied by the 25-year old female driver, a 15-year old female front right passenger and four children seated in the rear seat. The police noted the ages of the children as a 6-year old, a 5-year old, an 11-month old, and the 2-year old male. Although the police did not report the specific seating positions of the children, the Public Information Officer stated that the 2-year old male was trapped in the rear right window. A booster Child Safety Seat (CSS) was in the rear seat of the Toyota, however, it was unknown which child was seated in this CSS. The driver reported to the police that the 2-year old male involved in this incident shared the vehicle's three-point lap and shoulder belt system with another child while the vehicle was in motion.

As the driver entered the parking lot, all four door windows in the Camry were open. It was not reported if the windows were fully or partially open. Based on an exemplar vehicle, the front door windows fully retracted into the doors while the rear door windows retracted approximately 70 percent into the doors. In the full open position of the exemplar vehicle, 12 cm (4.9") of the rear door glazing was exposed vertically and 56 cm (22") horizontally. The aft 15 cm (6") of the glazing was fully concealed into the door due to the contour of the roof and C-pillar, thus exposing the full height of the window opening. At some point during the parking sequence, the 2-year old unbuckled the safety belt and extended his head out of the open rear right door window.

Incident

The driver maneuvered the vehicle from the driving lane into a parking space and parked the Toyota Camry. She stated to the investigating officer that she raised all of the door power windows from her position and exited the vehicle along with the front right passenger. It was not reported if she raised the windows with the engine running or with the engine off. The driver and front right passenger briefly talked about the products they needed to purchase at the store. During this exchange that lasted approximately one minute, the driver observed the 2-year old male trapped in the rear right window. The driver noted that the child's head and arms were extending out of the window with the glazing closed against his throat. She ran to the driver's side of the vehicle and used the driver's switch console to lower the window. It is unknown is she started the vehicle or turned the ignition switch to the on-position to energize the window switch. As the window lowered, the driver observed the child fall back onto the rear seat of the Camry.

Post-Incident

A call was made to the emergency response system (9-1-1) for medical assistance for the injured child. A witness to the post-incident activities observed the driver holding the child who appeared lifeless. The mother was pouring water over the head of the child in an attempt to revive him. The police and fire department paramedics arrived on-scene. The child was stabilized at the scene and helicopter service was requested to transport the child to a local pediatric trauma center. He was admitted to the hospital in critical, but stable condition. Although the nature and extent of his injuries are unknown, a fireman at the scene noted a mark on the neck of the child. The child survived and recovered from his injuries.

Power Window/Switch Configurations – Exemplar Vehicle

An exemplar 1998 Toyota Camry was examined and tested for this remote-level investigation. The main power window switch control panel was mounted on the forward aspect of the door armrest in a near horizontal position **(Figure 2)**. The switch panel consisted of four rocker-style switches for the four door windows with the fronts located forward of the rear. The driver's door window switch was equipped with an auto-down feature. Each switch required down-pressure on the leading edge to lower the windows. The leading edge of the switch had to be lifted to power the window to close the windows. The Camry was equipped with a window lockout feature that consisted of a detent switch that was located forward of the window switches. The power lock rocker switch was located to the left (outboard) of the lockout switch. The Camry was also equipped with a reserve power feature that allowed the power windows to operate from any door position for 43 seconds after the ignition was turned to the off-position. This feature as described in the vehicle Owner's Manual is disabled when either front door is opened.

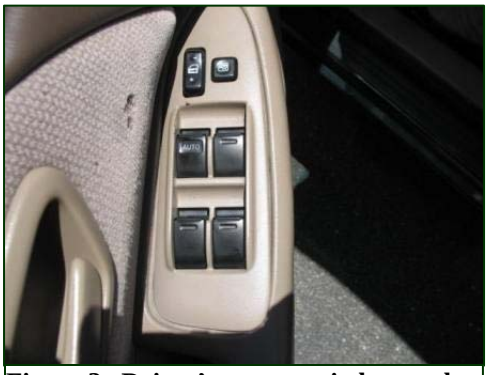

Figure 3. Driver's power switch console on an exemplar vehicle.

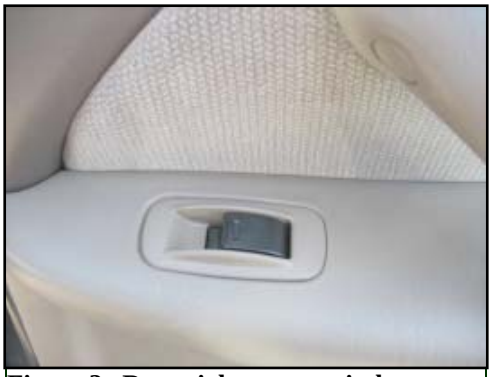

Figure 2. Rear right power window switch on an exemplar vehicle.

The right front and rear door power window switches were positioned horizontally on the forward aspect of the door armrests **(Figure 3)**. These rocker-style switches required the same motion to operate the windows as the main switch panel on the driver's door armrest.

The rear door window switches were positioned 13-16 cm (5.25-6.4”) aft of the leading edge of the door and 20 cm (8”) below the top of the door panel. The switches were positioned in a trim that was secured to the 9 cm (3.5”) wide armrest. The switches required approximately 3 mm (0.125”) of movement to activate the windows in either direction.

The rear door panels were configured with an armrest that extended the full length of the door panel. The door pull handle was integrated into the armrest and extended 15 cm (5.75”) above the top of the armrest. The door recessed release lever was mounted in the upper panel aft of the pull handle. This was located 23-34 cm (9-13.5”) rearward of the leading edge of the door.

The rear door glazing of the exemplar vehicle was AS2 tempered with OEM solar tint. The glazing was 41 cm (16”) in height, 71 cm (28”) in length at the base, and 42 cm (16.5”) in length at the top. The rear third of the glazing tapered downward along the roof side rail and the C-pillar. In the opened position, the glazing protruded 12 cm (4.9”) above the top of the door panel with 56 cm (22”) of glazing exposed from the B-pillar. The open area of the window was 28x71 cm (11.1x28”). It was not known if the window was in the full-down position at the on-set of this event.

Power Window Closing Force Test – Exemplar Vehicle

The exemplar vehicle was tested to determine the closing force of the rear right power window using an IMADA Digital Force Gauge that was calibrated to 311 N (70 lbs) of force on 11/26/2006. The vehicle’s engine was started and the rear right power window was opened using the driver’s switch. The force gauge was positioned between the window and the window frame. The plunger end of the gauge was equipped with a duck-bill end that was positioned over the top of the glazing. With the engine running to fully power the vehicle’s electrical system, the window was closed against the gauge. A peak closing force of 370 N (83.1 lb) was recorded **(Figure 4).** With up-pressure applied to the switch, the closing force began to drop within one second of the peak recording. Within seconds, the closing force dropped to 338 N (76 lbs). This test was repeated which yielded lower results as the power window motor heated up.

Figure 4. Peak closing force reading of 370 N (83.1 lbs) of the rear right power window.

The test was repeated with the ignition switch placed in the run-position with the engine off. Activating the window with the driver’s switch, the rear right window closed at a peak force of 311 N (70 lbs), before dropping to 295 N (66.4 lbs), then down to 225 N (50.5 lbs) within seconds of the onset of the test.

The front windows of this 1998 exemplar vehicle were tested using the same procedure with the engine running. The left front window peak closing force was recorded at 365 N (82 lbs) while the front right recorded a peak force of 298 N (67 lbs).

A second exemplar vehicle was tested; however, this vehicle was a 1997 model year Camry. The body style and switch configurations were identical to the 1998 exemplar vehicle. With the engine running, the rear right power window closed peak force of 282 N (63.4 lbs) prior to dropping to 271 N (61 lbs) of force as the motor began to heat up. The rear left window of this vehicle recorded a peak value of 287 N (64.5 lbs).

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

C A 0 7 0 1 9

IDENTIFICATION

2. Date of Crash 0 7 / 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 + / - 9 9 9 %

12. Estimated distance from parked position to impact

0 0 0 . 0 m

13. Estimated speed at impact 0 0 0 kmph

14. Grade at impact +/ - 9 9 9 %

15. Estimated distance from impact to vehicle final rest

0 0 0 . 0 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 C A 0 7 0 1 9

VEHICLE IDENTIFICATION

2. VIN 4 T 1 B G 2 2 K 5 W U X X X X X X

3. Model Year 1 9 9 8

4. Vehicle Make (specify): Toyota

5. Vehicle Model (specify): Camry

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 P195/70R14

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)
Front Left	1	☐	☐ ☐ ☐ Full Down / Mid / Full Up
Front Middle		☐	☐ ☐ ☐ Full Down / Mid / Full Up
Front Right	1	☐	☐ ☐ ☐ Full Down / Mid / Full Up
2nd Left	7	☐	☐ ☐ ☐ Full Down / Mid / Full Up
2nd Middle	7	☐	☐ ☐ ☐ Full Down / Mid / Full Up
2nd Right	7	☐	☐ ☐ ☐ 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

NOTES:

Unknown if head restraints were present in the vehicle.

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		N/A	
Top of trunk/tailgate		N/A	
Bottom of bumper		N/A	
Trailer hitch (if applicable)		N/A	
Undercarriage			
	Sway bar	N/A	
	Axle	N/A	
	Differential	N/A	
	Other (specify): N/A	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

C A 0 7 0 1 9

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

C A 0 7 0 1 9

DRIVER PROFILE

2. Driver's Age 2 5
   99 = Unknown

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

4. Driver's Height 1 6 3 cm
   999 = Unknown

5. Driver's Weight 1 1 3 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): Remained in vehicle
   - ○ 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:

    Grocery store

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
C A 0 7 0 1 9

NON-MOTORIST PROFILE

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

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

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

5. Non-motorist's Weight — 9 9 9 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: RR power window
○ 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): Passenger in vehicle
○ Unknown

12. Non-motorist approach relative to rear of vehicle
○ Stationary
○ From left
○ From right
○ From behind
◉ Other (specify): Passenger in vehicle
○ 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	Unknown			
	Helmet	Unknown			
	Hood	Unknown			
	Other (specify): _____	Unknown			
UPPER BODY	Short Sleeve	Unknown			
	Long Sleeve	Unknown			
	Light Jacket	Unknown			
	Heavy Jacket	Unknown			
	Other (Specify): _____	Unknown			
LOWER BODY	Shorts	Unknown			
	Pants	Unknown			
	Shoes	Unknown			
	Other (specify): _____	Unknown			