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

NHTSA

DOT HS 812 536

May 2018

Special Crash Investigations Non-Traffic Surveillance Remote Hyperthermia Fatality Investigation Vehicle: 2016 Nissan Rogue Location: Pennsylvania Incident Date: July 2016

DISCLAIMER

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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 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 vehicles or their safety systems.

This report and associated case data are based on information available to the Special Crash Investigation team on the date this report was published.

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16. Abstract The interest in this remote investigation was the circumstances surrounding the hyperthermia-related fatality of a 4-year-old female who was found inside a locked 2016 Nissan Rouge. The female driver of the Nissan dropped off two other children at daycare facilities and proceeded directly to her work place without dropping off the 4-year-old female at a third facility. This child was seated in a belt-positioning booster child restraint system (CRS) in the second row left position of the Nissan. As the driver arrived at her work place, she parked the Nissan, exited the vehicle and locked the doors with the key fob. She returned to the Nissan approximately 6.5 hours later to find the child unresponsive on the front row right floor of the vehicle. The child was transported to a local hospital where she was pronounced deceased. The child was able to unbuckle the vehicle's safety belt system to remove herself from the CRS, but was not able to manually unlock the doors to exit the vehicle.			
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NON-TRAFFIC SURVEILLANCE
SPECIAL CRASH INVESTIGATIONS
CASE NO. CR16034
REMOTE HYPERTHERMIA FATALITY INVESTIGATION
VEHICLE: 2016 NISSAN ROUGE
LOCATION: PENNSYLVANIA
INCIDENT DATE: JULY 2016

BACKGROUND

The interests of this remote investigation are the circumstances surrounding the hyperthermia-related fatality of a 4-year-old female who was found inside a locked 2016 Nissan Rouge. **Figure 1** is an exemplar view of a 2016 Nissan Rouge. The female driver of the Nissan dropped off two other children at daycare facilities and proceeded directly to her work place without dropping off the 4-year-old female at a third facility. This child was seated in a belt-positioning booster child restraint system (CRS) in the second row left position of the Nissan. As the driver arrived at her work place, she parked the Nissan, exited the vehicle and locked the doors with the key fob. She returned to the Nissan approximately 6.5 hours later to find the child unresponsive on the front row right floor of the vehicle. The child was transported to a local hospital where she was pronounced deceased. The child was able to unbuckle the vehicle's safety belt system to remove herself from the CRS, but was not able to manually unlock the doors to exit the vehicle.

Figure 1: Right side view of an exemplar 2016 Nissan Rouge.

The Nissan was equipped with a power locking system that was activated by the key fob. Within the vehicle, electric door lock rocker switches were mounted to the front door panels forward of the door close pull handle. These switches could lock or unlock all doors in the Nissan with or without ignition activation. Separate rotating mechanical levers were mounted in the cavity of the flush-mounted door latch release levers. These rotating levers provided the manual lock or unlock functions of an individual door from inside the vehicle. The rear doors were also equipped with manually operated child locks that would lock out the interior rear door levers. The police investigation determined that simply pulling on the interior door release lever did not override the locking system. The doors would not open from the inside without activating one of the unlocking features. An SCI inspection of an exemplar Nissan Rouge confirmed the operation of the Nissan's door locks.

The incident was identified by the National Highway Traffic Safety Administration and assigned to the Special Crash Investigations (SCI) group for further research in November 2016. This research is aimed to chronicle the circumstances of these types of incidents and provide direction to potential countermeasures. Approximately 700 children have died due to hyperthermia over a 19-year period (1998-2016) with 28 percent of these deaths attributed to children gaining access to unattended vehicles.[1]

The SCI team contacted the involved police agency and interviewed the investigating officer to obtain the circumstances of the incident. This police interview, surveillance images released by the police to SCI, an exemplar vehicle inspection, supplemental internet research and the medical record data provide the basis for this remote SCI investigation.

INCIDENT SCENE

This hyperthermia fatality incident occurred in a parking lot of a commercial business during daylight hours over a 6.5-hour period. The National Weather Service historical data recorded a temperature of 22.8 ºC (73 ºF) with 64 percent humidity, calm winds, and clear skies at 0854 hours, 24 minutes after the Nissan was parked in the parking lot. At 1154 hours, the temperature increased to 28.9 ºC (84 ºF) with 64.9 percent humidity and westerly winds of 13 km/h (8.1 mph). Two hours later, at 1354 hours, the temperature was 32.8 ºC (91 ºF) degrees with 63 percent humidity and winds of 22.2 km/h (13.8 mph) out of the west southwest. The temperature was reported at 35 ºC (95 ºF) degrees with a humidity level of 62.1 percent and sustained winds of 22.2 km/h (13.8 mph) at 1554 hours, approximately 20 minutes after the discovery of the child in the Nissan.

Figure 2: South-facing surveillance image of the incident site. Image obtained from the investigating police department.

The commercial business complex where the incident occurred consisted of a cluster of buildings oriented in a westerly direction on a narrow street in an urban location. A single-story garage area was located at the southwest corner of the building with four garage bays, each configured with a roll-up overhead door. An employee parking area was located immediately south of the garage and consisted of three marked parking spaces that were perpendicular to the street. Additional parking was provided behind the building on the south aspect with entrance from a narrow intersecting street. Several large trees were located to the west of the commercial building; however, these trees did not appear to provide shade to the three parking spaces. A security camera was mounted to the building that provided a view of the garage space and the three parking spaces located to the south of the garage area. The Nissan was parked in the third, most southern space of the parking facing west. The parking lot and the street surfaces were asphalt. **Figure 2** is a surveillance image of the Nissan entering the parking lot at the incident site.

[1] Null, J. (2016). Heatstroke Deaths of Children in Vehicles (Web page). San Jose, CA: Department of Meteorology and Climate Science, San Jose State University. Available at http://noheatstroke.org

2016 NISSAN ROGUE

Description

The vehicle of interest for this remote hyperthermia death investigation was a 2016 Nissan Rouge configured with S-level trim. The Nissan, identified by Vehicle Identification Number 5N1AT2MV2GCxxxxxx, was a four-door crossover vehicle with a rear lift gate. The powertrain consisted of a 2.5 liter 4-cylinder gasoline engine linked to a continuously variable transmission and all-wheel drive. Standard features included traction control, electronic stability control, 4-wheel ABS, certified advanced 208-compliant (CAC) frontal air bags, front row seat mounted side impact air bags and FMVSS 226 ejection mitigation-compliant inflatable curtain air bags for the front and second rows. Manual three-point lap and shoulder belts were available for all five designated seat positions.

The exterior color of the Nissan was white; the interior color was unknown. The vehicle was configured with a central power locking system, power windows for the four doors, and a keyless ignition. A remote key fob contained the door lock/unlock functions and was the interface for the keyless ignition system.

Glazing

Based on an inspection of an exemplar vehicle, the Nissan was configured with an AS1 laminated windshield, operable AS2 front door window glazing, operable AS3 deep tint rear door glazing and fixed lift gate glazing and AS3 quarter window glazing.

Exterior Door Handles

The Nissan was configured with a horizontal-pull style handle for the four doors **(Figure 3)**. Based on an exemplar vehicle inspection, the vertical heights of the front door handles were 98 to 102 cm (38.5 to 40 in) above the pavement and the rear door handles were 106 to 109 cm (41.75 to 43 in) above the pavement.

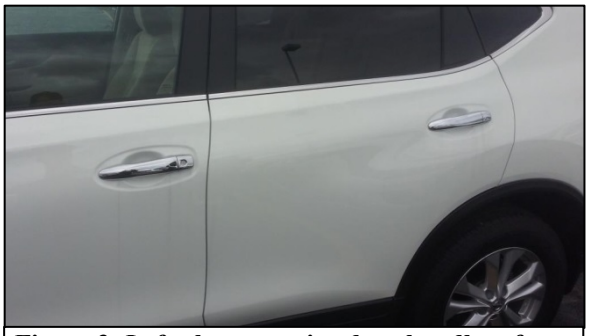


Figure 3: Left plane exterior door handles of an exemplar 2016 Nissan Rouge.

Interior Door Release Levers

Based on the exemplar inspection, the interior door release levers were flush-mounted into the upper-mid aspects of the front door panels and into the upper-forward third of the rear door panels. The levers were 13 cm (5 in) in overall length and 6 cm (2.25 in) in height and were molded plastic, formed in an upward curve shape. All four door release levers were finished in chrome. The hinge point for the levers was at the aft aspect. The interior door release levers are depicted in **Figures 4 and 5**.

A manual rotating locking lever was mounted within the recess of all four door panels **(Figure 4 and 5)** directly above the aft aspect of the door release levers. These rotating lock levers were finished in gray and blended into the door panel with no specific identification or highlight marking. The levers were 4 cm (1.6 in) in length and 2 cm (0.9 in) in height.

Figure 4: Exemplar view of the front row (driver's) door release lever and rotating locking lever.

Figure 5: Second row right door release lever and the rotating locking lever of an exemplar vehicle.

Locking System

The Nissan was equipped with a power locking system with the manual rotating locking levers at each of the four doors. There were three available methods to lock/unlock the vehicle; one by depressing the lock or unlock function of the remote key fob, the second by engaging the front door panel interior-mounted power lock switch **(Figure 6)**, and the third by manually engaging the rotating lock levers at each of the doors. The door panel-mounted power lock switch was a rocker-type switch that locked the doors by depressing the forward aspect of the switch and unlocked by depressing the aft aspect of the horizontally-mounted switch. This switch was located between the door panel and the door closure pull handle. The rotating locking levers would only lock the specific door while the power system locked all four doors and the rear lift gate. It should be noted that the unlock feature on the key fob required two engagements to unlock all doors inclusive of the lift gate while the driver's door only required a single engagement of the key fob unlock button. Once locked, none of the four doors would unlock from the inside by pulling on the interior door release levers. All four positions required a manual rotation of the locking lever or engagement of the power lock switch.

Figure 6: Power locking rocker switch on the forward aspect of the driver's door panel.

CHILD NON-MOTORIST

The child involved in this hyperthermia investigation was a 4-year-old (4 years/7 months) female with an autopsy-reported height of 105 cm (41.5 in) and a weight of 18 kg (40 lb). At the time of the incident, she was dressed in a pink floral pattern top, pink shorts, pink underwear, purple socks and sneakers. A rectal temperature of 43.3 ºC (110 ºF) was recorded during the hospital examination, approximately 15 minutes after she was discovered in the vehicle. The child was the daughter of the driver's fiancé (the driver's live-in boyfriend).

INCIDENT

The 28-year-old female driver departed the family residence on the morning of the incident with the 4-year-old victim and two additional siblings in the Nissan Rouge. The additional children

included a 7-year-old female and a 2-year-old male. The 4-year-old was restrained in a CRS booster seat and secured by the vehicle's three-point lap and shoulder safety belt system. Her intention was to drop all three children off at their respective daycare facilities before proceeding to her work place. This was a daily routine for the driver. She had a history of running late and stated to the police during the investigation that she felt overwhelmed with the tasks of getting the children ready and getting out the door to get to work on time. She further stated that she had previously forgotten to drop the children off and drove to work with all three children in the vehicle.

On this day, she departed her residence and traveled to her 7-year-old daughter's school and dropped her off for her day's activities. The driver then proceeded to the daycare facility of the 2-year-old. She parked the Nissan and opened the left rear door and presumably unbuckled the child from a second-row center CRS. This required removing the 2-year-old from in front of the 4-year-old victim. In doing so, she asked the 2-year-old to say goodbye to his sister. Once the child was at the daycare facility, the driver reentered the Nissan and travelled approximately 6 minutes to her work place, forgetting to drop the 4-year-old victim off at daycare. The driver stated to the police post-incident that the drive to work was silent with no communication with the 4-year-old victim.

The driver approached her work place in a westerly direction on a narrow one-lane street and entered the parking lot. She had to pull forward of the parking space then back into the third of three designated spaces on the south side of the building. Two other vehicles were parked in the first two parking spaces. The driver stated during the police investigation that she normally looks back when backing as she is not familiar with the vehicle's backup camera as it's a new vehicle. As she parked the Nissan, the vehicle was facing in a westerly direction. The driver stated that she retrieved several items from the front right seat including her purse and a lunch bag prior to exiting the vehicle. She opened the driver's door, exited the Nissan, and locked the vehicle with the key fob. It was determined during the police investigation that all windows of the Nissan were fully closed. The security camera captured the driver walking in front of the Nissan and proceeding in a northerly direction across the parking lot to her work place. She was only carrying her purse in her right hand. The time that she arrived at work was between 0830 and 0900 hours. The security camera system was not configured with a time recording stamp.

At approximately 1100 hours, the driver's live-in boyfriend and father of the victim arrived at her work place **(Figure 7)**. The security camera captured him parking his pickup truck in front of the southern-most garage door, four parking spaces to the north of the Nissan Rouge (yellow arrow). He exited the vehicle and proceeded into the driver's work place. The male stayed at the work place for approximately one hour. During this hour, he asked the driver if she provided breakfast to the children. This discussion did not trigger a concerned response from the driver. As the male exited the building and began to walk to

Figure 7: South-facing view of location of the parked Nissan and the child's father arriving at the incident site. (Surveillance image provided by the investigating police department.)

this vehicle, he stopped to talk to a person in a pickup truck who parked immediately to the north of his vehicle. Following this discussion, the male entered his truck and drove away from the driver's work place.

The driver exited her work place at 1530 hours and walked to the parked Nissan, approaching the vehicle from the back and proceeding along the left side to the driver's door. She unlocked the vehicle with the key fob and entered the Nissan and placed her purse of the front row right seat. As she did this, she observed the 4-year-old victim slumped on the floor of the front right seating position. The driver exited the vehicle and screamed for help. A coworker ran to her aid and removed the child victim from the Nissan. This coworker stated that the child was soaked in sweat as if she had fallen in a pool. The coworker carried the child into the workplace as the emergency response system was notified of the incident. Emergency Medical Services (EMS) arrived on-scene and initiated cardiopulmonary activities in preparation of ambulance transport to a local hospital. Resuscitative efforts were not successful and the child victim was pronounced deceased at 1558 hours.

The Nissan was towed to police impound for the completion of their investigation. A series of temperature testing was performed on the Nissan in an attempt to determine the inside temperature of the vehicle during the duration of the incident. These tests were conducted over a 3- day period in similar ambient temperatures with the vehicle facing west. The maximum inside temperature recorded by the police was 48.8 ºC (120 ºF).

Following the police investigation, the 28-year-old driver was charged with involuntary manslaughter. The criminal aspects of this case are pending at the time of the SCI remote investigation; therefore, the police would not release images of the Nissan.

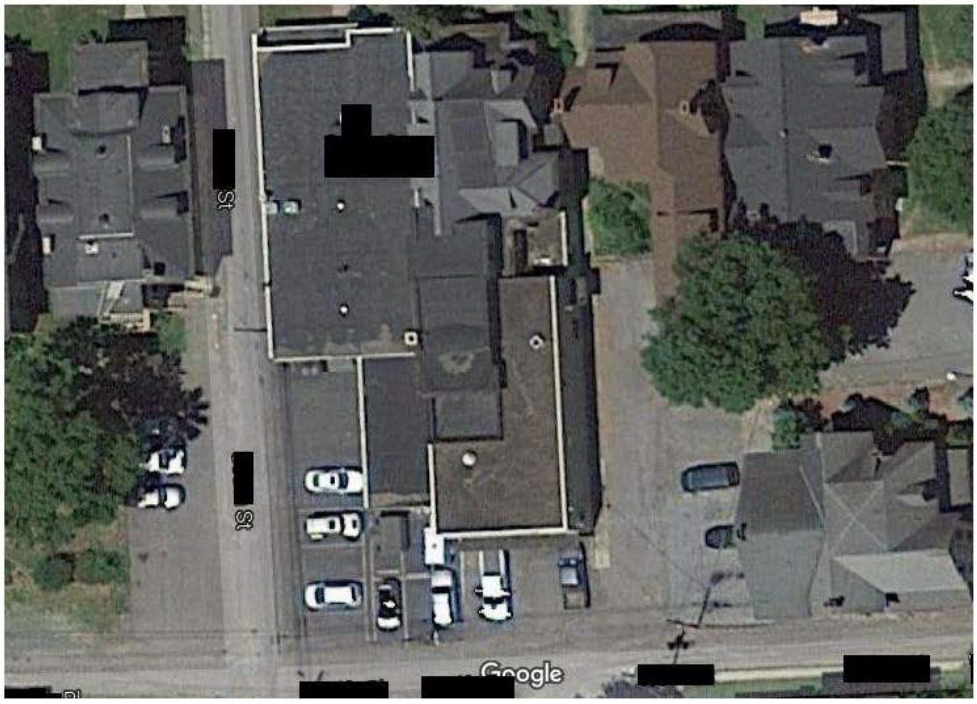
CHILD NON-MOTORIST INJURIES

Injury No.	Injury	AIS 2015	Involved Physical Component	IPC Confidence
1	Hyperthermia; with noted mild vascular congestion and mild cerebral edema	010206.5	Vehicle entrapment	Certain
2	Contusions to right elbow	710402.1	Unknown	Unknown
3	Scattered contusions on right thigh, 1/8 to ½ in	810402.1	Unknown	Unknown
4	Scattered contusions on right leg, 1/8 to ½ in	810402.1	Unknown	Unknown
5	Scattered contusions on left thigh, 1/8 to ½ in	810402.1	Unknown	Unknown
6	Scattered contusions on left leg, 1/8 to ½ in	810402.1	Unknown	Unknown
7	Two ¼ in. abrasions to right elbow	710202.1	Unknown	Unknown

8	Scattered abrasions on right thigh, 1/8 to ½ in	810202.1	Unknown	Unknown
9	Scattered abrasions on right leg, 1/8 to ½ in	810202.1	Unknown	Unknown
10	Scattered abrasions on left thigh, 1/8 to ½ in	810202.1	Unknown	Unknown
11	Scattered abrasions on left leg, 1/8 to ½ in	810202.1	Unknown	Unknown

Source: Autopsy report (internal)

INCIDENT SITE DIAGRAM



N

Incident Site:
Commercial Business Parking Lot

V1: 2016 Nissan Rogue

	NHTSA www.nhtsa.gov
Case Number:	CR16034

Appendix
Non-Traffic Surveillance Forms

Not Applicable ☐

Reset Values

Print Forms

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

SCENE FORM

Special Crash Investigations
Non-Traffic Surveillance

1. Case Number

C R 1 6 0 3 4

IDENTIFICATION

2. Date of Crash 0 7 / x x / 1 6

3. Time of Crash 1 5 2 6

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
- ☐ Utility poles
- ☐ Signs
- ☐ Glare
- ☐ Unknown
- ☐ No driver present
- ◉ Other (specify) N/A

9. Crash location

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

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

- ☐ None
- ☐ Other vehicles
- ☐ Building
- ☐ Trees
- ☐ Shrubbery
- ☐ Utility poles
- ☐ Signs
- ☐ Glare
- ◉ Other (specify) N/A
- ☐ 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

Revised January 2018

Not Applicable ☐

Reset Values

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

VEHICLE FORM

Special Crash Investigations
Non-Traffic Surveillance

1. Case Number C R 1 6 0 3 4

VEHICLE IDENTIFICATION

2. VIN 5 N 1 A T 2 M V 2 G C X X X X X X

3. Model Year 2 0 1 6

4. Vehicle Make (specify): Nissan

5. Vehicle Model (specify): Rogue

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	☐	Not inspected
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	Not inspected by SCI team.
Front Middle	0	☐	☐ 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	

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			Not inspected by SCI team.
Top of trunk/tailgate			
Bottom of bumper			
Trailer hitch (if applicable)			
Undercarriage			
	Sway bar		
	Axle		
	Differential		
	Other (specify): _____		
Sensor Height (if equipped)			
Camera Height (if equipped)			

Not Applicable ☑

Undo Not Applicable

Reset Values

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

Back Up / Parking Aid Form

Special Crash Investigations
Non-Traffic Surveillance

1. Case Number

C R 1 6 0 3 4

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

Revised January 2018

14. Did driver react to warning

- ☐ No sensor present
- ☐ Yes
- ☐ No
- ☐ Unknown
- ☐ Sensor present, did not sound

15. Did driver report common false warnings

- ☐ No sensor present
- ☐ Yes
- ☐ No
- ☐ Unknown

Not Applicable

No Driver Present ☐

Undo Not Applicable

Reset Values

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

DRIVER FORM

Special Crash Investigations
Non-Traffic Surveillance

1. Case Number

C R 1 6 0 3 4

DRIVER PROFILE

2. Driver's Age ____ ____
   99 = Unknown

3. Driver's Sex
   - ☐ Male
   - ☐ Female
   - ☐ Unknown

4. Driver's Height ____ ____ ____ cm
   999 = Unknown

5. Driver's Weight ____ ____ ____ 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:

    _____

    _____

13. Driver in a hurry
    - ☐ Yes
    - ☐ No
    - ☐ N/A
    - ☐ Unknown

Not Applicable

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

Revised January 2018

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 and/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
Non-Traffic Surveillance

1. Case Number
C R 1 6 0 3 4

NON-MOTORIST PROFILE

2. Non-motorist's Age
99 = Unknown
0 4 ☐ Months ☒ Years

3. Non-motorist's Sex
☐ Male
☒ Female
☐ Unknown

4. Non-motorist's Height
999 = Unknown
1 0 5 cm

5. Non-motorist's Weight
999 = Unknown
0 1 8 kg

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: Hyperthermia
☐ 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) N/A
☐ 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): N/A
☐ Unknown

12. Non-motorist approach relative to rear of vehicle
☐ Stationary
☐ From left
☐ From right
☐ From behind
☒ Other (specify): N/A
☐ 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): N/A
☐ 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) N/A
☐ 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): _____				
	Unknown				
UPPER BODY	Short Sleeve	Pink	Unknown	Unknown	Unknown
	Long Sleeve				
	Light Jacket				
	Heavy Jacket				
	Other (Specify): _____				
	Unknown				
LOWER BODY	Shorts	Pink	Unknown	Unknown	Unknown
	Pants				
	Shoes	Unknown	Unknown	Unknown	Unknown
	Other (specify): _____				
	Unknown				

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**National Highway
Traffic Safety
Administration**

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