



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



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DOT HS 812 532

May 2018

**Special Crash  
Investigation:  
Remote Non-Traffic  
Surveillance Hyperthermia  
Investigation  
Vehicle: 2006 Volkswagen  
Passat  
Location: Ohio  
Incident: 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 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 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 the report was published.

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**Technical Report Documentation Page**

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16. Abstract The interest of this investigation is the heat stroke death of a 3-year-old male who entered a parked, unoccupied 2006 Volkswagen Passat and was unable to exit the vehicle. This incident occurred in a suburban, residential neighborhood in the driveway of a single-family residence. The Volkswagen was inoperative, unlocked, with the windows closed, and parked in the driveway near the back door of the residence. An unknown year and model BMW was also parked in the driveway near the Volkswagen. The victim and his extended family gathered at the residence between 1220 and 1500 hours. During the course of the afternoon it was reported that there was much activity at the residence including errands being run by the victim's father regarding reported maintenance for the BMW and the father's brother and stepbrother performing maintenance on their vehicles. The victim, his brother, and cousin were initially supervised in the residence by the victim's grandmother. Supervision of the children later passed to the victim's father and the father's stepbrother, then back to the grandmother. At some point after approximately 1700 hours but prior to approximately 1840 hours the victim exited the residence, probably through the back door, and entered the Volkswagen through the right front door and could not exit the vehicle. At approximately 1840 hours it was discovered that the victim was missing and a search for him ensued. A 9-1-1 call was placed at 1901 hours. Shortly after arrival of emergency responders (arrival time unknown) a relative found the victim on the right front floorboard of the Volkswagen. The victim was transported by ambulance to a hospital and subsequently transferred to a children's hospital where life support was eventually ceased and he was pronounced deceased two days following the incident.					
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**INDIANA UNIVERSITY**  
**TRANSPORTATION RESEARCH CENTER REMOTE NON-TRAFFIC**  
**SURVEILLANCE HYPERTHERMIA INVESTIGATION**  
CASE NUMBER - IN16028    LOCATION - OHIO  
VEHICLE - 2006 VOLKSWAGEN PASSAT    INCIDENT DATE - July 2016

**BACKGROUND**

The interest of this investigation is the heat stroke death of a 3-year-old male who entered a parked, unoccupied 2006 Volkswagen Passat (**Figure 1**) and was unable to exit the vehicle. This incident investigation was initiated by the National Highway Traffic Safety Administration on September 28, 2016. The investigation was assigned on December 6, 2016, following preliminary investigation by the Special Crash Investigation (SCI) Team at the Indiana University Transportation Research Center, to gather source documents, obtain the police incident report and police on-scene photographs. Attempts to interview the involved people and locate the Volkswagen were unsuccessful and a remote investigation was assigned. This incident occurred in Ohio in July 2016 between approximately 1700 and 1840 hours and was investigated by the local police agency.



**Figure 1:**Police photo of the 2006 Volkswagen Passat at the incident scene, view northeast

This incident occurred in a suburban, residential neighborhood in the driveway of a single-family residence. The Volkswagen was inoperative, unlocked, with the windows closed, and parked in the driveway near the back door of the residence. An unknown year and model BMW was also parked in the driveway near the Volkswagen. The victim and his extended family gathered at the residence between 1220 and 1500 hours. During the course of the afternoon it was reported that there was much activity at the residence including errands being run by the victim's father regarding reported maintenance for the BMW and the father's brother and stepbrother performing maintenance on their vehicles. The victim, his brother, and cousin were initially supervised in the residence by the victim's grandmother. Supervision of the children later passed to the victim's father and the father's stepbrother, then back to the grandmother. At some point after approximately 1700 hours but prior to approximately 1840 hours the victim exited the residence, probably through the back door, and entered the Volkswagen through the right front door and could not exit the vehicle. At approximately 1840 hours it was discovered that the victim was missing and a search for him ensued. A 9-1-1 call was placed at 1901 hours. Shortly after arrival of emergency responders (arrival time unknown) a relative found the victim on the right front floorboard of the Volkswagen. The victim was transported by ambulance to a hospital and subsequently transferred to a children's hospital where life support was eventually ceased and he was pronounced deceased two days following the incident.

## INCIDENT SUMMARY

### *Incident Site*

This incident occurred between approximately 1700 and 1840 hours in a suburban, residential neighborhood in the driveway of a single-family residence (**Figure 2**). The weather conditions during the time that the incident occurred were clear with 16 kilometers (10 miles) visibility, southwest winds at 19 to 11 km/h (12 to 7 mph), a temperature range of 26.1 to 27.2 deg C (79

to 81 deg F), heat index of 30.0 to 31.1 deg C (86 - 88 deg F) humidity range of 60 to 61 percent, and a dew point range of 20.0 to 20.6 deg C (68 to 69 deg F), according to local weather reports. The

driveway was located at the back of the residence. An inoperative Volkswagen was located an estimated 8 m (26 ft) due north of the west-facing back entrance to the house. An unknown year and model BMW was also parked in the driveway located approximately 3 m (10 ft) west of the Volkswagen and an unknown year Dodge Durango was parked at the curb near the driveway. The BMW and Dodge were related to the incident since activities related to maintenance on the vehicles was taking place during the time that the incident occurred. The BMW and Volkswagen were parked in front of a two-car garage. No shade trees were located near the Volkswagen; however, shade from the garage fell on the vehicle in the later afternoon hours. The Incident Diagram is included at the end of this report. The Non-Traffic Surveillance data forms are attached to the end of this report as Attachment A.



**Figure 2:** Police photo showing residence and location of Volkswagen (arrow), view northeast

### *Pre-Incident*

The residence where this incident occurred was the home of the victim's grandparents. Nine family members gathered at the residence prior to the incident. They were the victim (3-year-old male), his grandmother (52-year-old), grandfather (59-year-old), brother (unknown age), cousin (4-year-old male), father (33-year-old), the father's brother and step-brother (36-year-old and 27-year-old), and the wife (37-year-old) of the father's brother.

A summary of the activities at the residence leading up to the incident were reported as follows. The victim, his father, and the victim's brother arrived at the residence between 1220 and 1400 hours.<sup>1</sup> The father's stepbrother and the victim's cousin arrived at the residence around 1400 hours. The three children were placed under the supervision of the grandmother and the children began watching television in a middle bedroom of the residence. The brother of the victim's father and the brother's wife arrived around 1500 hours. During the afternoon it was reported that there was much activity at the residence with people coming and going and the father, brother, and stepbrother reportedly working on their vehicles, which included a trip to a muffler shop to drop off the BMW

<sup>1</sup> A time range is given since there was inconsistency in the arrival time reported by the grandmother and father during the police interviews.

that was to be picked up later in the afternoon. During this time period the children remained under the supervision of the grandmother in the residence. At an unknown time between approximately 1500 hours and 1700 hours supervision of the children passed to the father and stepbrother while the grandmother ran an errand to a grocery store. The grandmother returned to the residence at approximately 1700 hours and reported seeing all the children in the residence as she resumed food preparation and other activities in the kitchen. The father and his stepbrother then left the residence to pick up the BMW at the muffler shop. After the father returned from the muffler



**Figure 3:** Police photo showing the BMW (background), photo from right side of Volkswagen, view west

shop he parked the BMW next to the Volkswagen. The father probably spent some time working on the vehicle since the hood was shown to be up in the police on-scene photographs (**Figure 3**). The father and stepbrother were also seen by the grandmother working on the Dodge that was parked at the curb near the driveway. It was during this time period (after 1700 hours but before 1840 hours) that the victim exited the residence unseen by the grandmother and entered the Volkswagen. At approximately 1840 hours the grandmother discovered that the victim was missing and a search for the child ensued. A 9-1-1 call was placed at 1901 hours.

### ***Incident***

The available information indicated that the victim probably exited the residence through the back door unseen by the grandmother. This was the most direct route to the driveway and the area where the children would likely play, and where the victim's father and other adults had been earlier in the day. Also, since the driveway and garage were located adjacent to the back entrance to the residence, it is likely that the back door was the most common entrance and exit point for the family members. The path from the middle bedroom where the victim was last seen to the back door passed through the kitchen based on the police photographs of the residence.



**Figure 4:** Police photo showing child hand prints on right rear door leading to right front door handle

Once the victim exited the residence, he would have to traverse a short distance across the porch, then down three steps to a deck and then one step off the deck to reach the driveway. The Volkswagen was located an estimated 8 m (26 ft) straight north of the west-facing back door of the residence. The police photographs of the Volkswagen documented child size hand prints on the exterior surface of the vehicle's right rear and right front door near the right front door handle (**Figures 4 and 5**) indicating that the victim entered the vehicle through the right front door. Child-size hand prints and fingerprints on the interior of the right front door and a smear of body oil, possibly from the victim's forehead, on the right front glazing indicated the victim probably attempted to exit the vehicle or summon help. A pair of children's sandals were found on the front left floor indicating the victim had likely gone to the

driver's side as well. There were also some perspiration marks on the driver's door and a smear of possible body oil was on the driver's door window. The status of the rear door child safety locks was not addressed in the police incident report. The evidence suggested that the victim never entered the second row.

### ***Post-Incident***

Shortly after arrival of emergency responders (arrival time unknown) the father's sister-in-law found the victim on the front row right floor of the Volkswagen and carried him into the kitchen. The victim was breathing but discolored and convulsing. Two responding police officers removed his clothing and used wet and frozen items in an attempt to cool him. The victim was then transported by ambulance to a hospital. His core temperature was reported to be 42.2 degrees C (108 degrees F) on arrival at the hospital. He was then transferred to a children's hospital where life support was eventually ceased and he was pronounced deceased two days after the incident at 1459 hours.



**Figure 5:** Police photo showing hand and finger prints near right front door handle and hand print on door handle

Emergency responders measured the interior temperature of Volkswagen after the right front door had been open for an unknown amount of time. The temperature in the front row was reported as 36.7 degrees C (98 degrees F) and 31.1 degrees C (88 degrees F) in the front right floor.

The police impounded the vehicle and processed it for physical evidence, which was photographically documented. They also photographed the interior and exterior of the residence and took measurements and photographs of the BMW's location relative to the Volkswagen. In September 2016 two county assistant prosecutors reviewed the case and determined that no charges would be filed.

### **2006 VOLKSWAGEN PASSAT DESCRIPTION**

The Volkswagen was an all wheel drive, five-passenger, four-door sedan (VIN: WVWCU73C76Exxxxxx) equipped with a 3.6-liter, V-6 engine and a six-speed automatic transmission with sport shift feature. The vehicle was equipped with four-wheel antilock brakes, frontal air bags, side impact inflatable curtain air bags, and rear door child safety locks.

## NON-MOTORIST DEMOGRAPHICS

The 3-year-old male non-motorist's height and weight were 99 cm (39 in) and 18 kg (40 lbs).

## NON-MOTORIST INJURIES

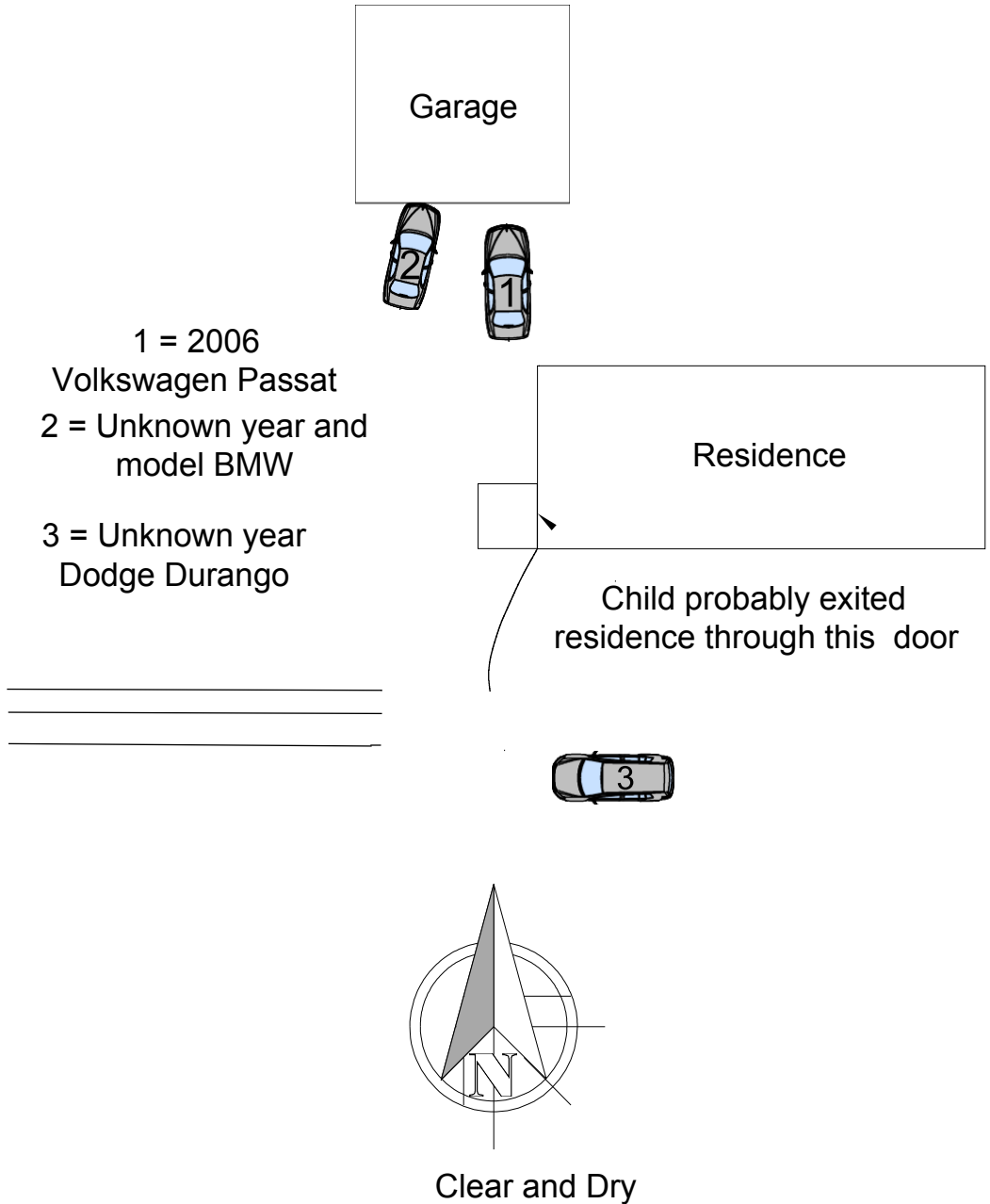
Injury No.	Injury	AIS 2015	Involved Physical Components (IPC)	IPC Confidence
	Hyperthermia resulting in anoxic encephalopathy, including edema of cerebellum and cerebral hemispheres, and multisystem organ failure <sup>2</sup>	010206.5	Heat casualty	Certain
	Abrasion, 1.3 cm (0.5 in) right temple, not further specified	110202.1	Unknown IPC	Unknown
	Contusion, 1.3 cm (0.5 in) on right shoulder, not further specified	710402.1	Unknown IPC	Unknown

*Source: Autopsy Records.*

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<sup>2</sup> Decedent was found unresponsive in a car with the windows closed on a hot day; rectal temperature was 42.2 °C (108 °F).

# INCIDENT DIAGRAM



Sketch of Incident Scene Not to Scale

	 <a href="http://www.nhtsa.gov">www.nhtsa.gov</a>
<p>Case Number:</p>	<p>IN16028</p>

**Appendix A**  
**Non-Traffic Surveillance Data 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

## IDENTIFICATION

2. Date of Crash   /   /

3. Time of Crash

Code reported military time of crash.

NOTE: Midnight = 2400  
Unknown = 9999

## AMBIENT CONDITIONS

4. Light Conditions

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

5. Atmospheric Conditions  
(Select all that apply)

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

6. Temperature

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

## SCENE INFORMATION

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

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

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

<input type="checkbox"/> None	<input type="checkbox"/> Utility poles
<input type="checkbox"/> Other vehicles	<input type="checkbox"/> Signs
<input type="checkbox"/> Building	<input type="checkbox"/> Glare
<input type="checkbox"/> Trees	<input type="checkbox"/> Unknown
<input type="checkbox"/> Shrubby	<input checked="" type="checkbox"/> No driver present
<input type="checkbox"/> Other (specify) _____	

9. Crash location

<input checked="" type="checkbox"/> Driveway	<input type="checkbox"/> Road / street
<input type="checkbox"/> Parking Lot	<input type="checkbox"/> Roadside / shoulder
<input type="checkbox"/> Sidewalk	<input type="checkbox"/> Other (specify) _____
<input type="checkbox"/> Alley	<input type="checkbox"/> Unknown
<input type="checkbox"/> Intersection of driveway and sidewalk	

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

- None
- Other vehicles
- Building
- Trees
- Shrubby
- Utility poles
- Signs
- Glare
- Other (specify) N/A
- Unknown

11. Grade at parked position    %

12. Estimated distance from parked position to impact

.  m

13. Estimated speed at impact   kmph

+ / -

14. Grade at impact    %

15. Estimated distance from impact to vehicle final rest

.  m

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

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   I     N     1     6     0     2     8  

### VEHICLE IDENTIFICATION

2. VIN   W     V     W     C     U     7     3     C     7     6     E     X     X     X     X     X  

3. Model Year   2     0     0     6  

4. Vehicle Make (specify):   Volkswagen  

5. Vehicle Model (specify):   Passat  

### GLAZING

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

### TIRE DATA

6. Vehicle Manufacturer Recommended Tire Size   P235/45R17  

7. LF Tire Size   Unknown  

9. RF Tire Size   Unknown  

8. LR Tire Size   Unknown  

10. RR Tire Size   Unknown

Seats / Head Restraint Data				NOTES: Adjustments of 2nd row head restraints not known
Seat Position	Seat Type (Select from below )	Head Restraint (Check if available)	Head Restraint Adjustment (select)	
Front Left	1	<input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
Front Middle	0	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
Front Right	1	<input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
2 <sup>nd</sup> Left	4	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
2 <sup>nd</sup> Middle	4	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
2 <sup>nd</sup> Right	4	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
3 <sup>rd</sup> Left	0	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
3 <sup>rd</sup> Middle	0	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	
3 <sup>rd</sup> Right	0	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Down / Mid / Full Up	

**Seat Type codes:**

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

**VEHICLE MEASUREMENTS**

Clearance Heights	Measurements (all from ground, and in centimeters)	NOTES
Beltline	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	
Sensor Height (if equipped)	N/A	
Camera Height (if equipped)	N/A	



Not Applicable

Undo Not Applicable

Reset Values

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National Highway Traffic Safety Administration

### Back Up / Parking Aid Form

Special Crash Investigations  
Non-Traffic Surveillance

1. Case Number  
I N 1 6 0 2 8

#### 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

Not Applicable

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

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### DRIVER FORM

Special Crash Investigations  
Non-Traffic Surveillance

1. Case Number  
 I N 1 6 0 2 8

**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

14. How did driver check behind (rear area of vehicle)  
 after vehicle entry  
*(Select all that apply)*  
 Did not look  
 Checked mirrors  
 Turned right and looked back  
 Turned left and looked back  
 Viewed Camera  
 Listened for auditory/visual warning from system  
 Other (specify): \_\_\_\_\_  
 N/A  Unknown

15. Estimated time between vehicle entry and start  
 of backing  
 0-10 Seconds  Over 60 Seconds  
 11-30 Seconds  N/A  
 31-60 Seconds  Unknown

Not Applicable

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  Other occupant
  - Headrest  Other (specify) \_\_\_\_\_
  - Cargo  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 on 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



**NON MOTORIST CLOTHING**

**NOTES:**

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

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

	<b>Clothing</b>	<b>Color</b>	<b>Fabric</b>	<b>Texture</b>	<b>Weight</b>
<b>H E A D W E A R</b>	Hat				
	Helmet				
	Hood				
	Other (specify): _____				
	Unknown				
<b>U P P E R  B O D Y</b>	Short Sleeve				
	Long Sleeve				
	Light Jacket				
	Heavy Jacket				
	Other (Specify): _____				
	Unknown				
<b>L O W E R  B O D Y</b>	Shorts				
	Pants	Dark blue	Natural	Soft	Medium
	Shoes				
	Other (specify): _____				
	Unknown				

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

