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ON-SITE NOT IN TRAFFIC SURVEILLANCE BACK OVER INVESTIGATION

CASE NUMBER - IN-07-030
LOCATION - TEXAS
VEHICLE - 2004 FORD EXPLORER SPORT TRAC XLT
INCIDENT DATE - July 2007

Submitted:

October 24, 2007
Revised January 25, 2008

Contract Number: DTNH22-07-C-00044

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590-0003

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

Technical Report Documentation Page

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15. *Supplementary Notes* On-site not in traffic surveillance back over investigation involving a 2004 Ford Explorer Sport Trac XLT and a pedestrian.			
16. *Abstract* This report covers an on-site not in traffic surveillance back over investigation involving a 2004 Ford Explorer Sport Trac XLT and a pedestrian (18-month-old, male), who was backed over in a residential driveway. The Ford was parked in the unattached garage of a residence. The driver and pedestrian left the residence through the front door. The driver then left the pedestrian on the front porch while she went to the garage to back the Ford to the front porch to load the pedestrian in the vehicle. The driver did not place a wooden/iron rod barrier across the top of the stairway of the porch as she normally would do, and the pedestrian climbed down the stairs and walked toward the garage. Meanwhile the driver backed out of the garage and down the driveway initially looking out of the open left front door and then through the rearview mirror. The driver did not see the pedestrian behind the vehicle, and the back bumper impacted the pedestrian, knocked him down, and the right rear tire ran over the pedestrian's head. The pedestrian sustained a crushed skull and was pronounced dead 90 minutes following the incident. The driver stated in her interview that before backing the Ford, she checked her rearview and right side view mirrors, but looked rearward out of the open left front door as she started the backing maneuver. She indicated that once the Ford's front doors were out of the garage, she began to view through the rearview mirror as she backed up. The on-site investigation and the visibility study indicated that the pedestrian was behind the case vehicle and within the Ford's rear blind zone at this point. The location of the pedestrian when the driver got in the vehicle and checked her rearview and right side view mirror and then looked rearward out of the open left front door as she started backing could not be determined.			
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NOT IN TRAFFIC SURVEILLANCE BACK OVER DATA FORMS . . . . .

BACKGROUND

IN-07-030

This incident was brought to NHTSA's attention on or before July 31, 2007 by an on-line article from a Texas newspaper. This incident involved a 2004 Ford Explorer Sport Trac XLT and a pedestrian. The incident occurred in July 2007 at 10:15 a.m., in Texas and was investigated by the applicable county sheriff department. The standard Texas Peace Officer's Crash Report was not completed by the sheriff's department. Instead, an incident/offense report was completed; however, it was not sent to any state agency. This incident is of special interest because the Ford was being driven in reverse (i.e., backing up) and backed over a pedestrian (18-month-old, male son of the driver), who sustained critical injuries, resulting in his death. This contractor contacted the investigating sheriff's department on August 6, 2007 and established initial cooperation. Final cooperation was established on September 3, 2007, and this contractor inspected the scene and Ford on September 12, 2007. This contractor also interviewed the Ford's driver (23-year-old, female) and two sheriff's detectives on September 12, 2007. In addition, an identical exemplar Ford Explorer Sport Trac XLT was inspected on September 18, 2007. This report is based on the sheriff's incident/offense report, interviews with the Ford's driver and investigating sheriff's detectives, scene and vehicle inspections, an exemplar vehicle inspection, and this contractor's evaluation of the evidence.

SUMMARY

The Ford was parked in the unattached garage of a residence located in a rural residential area. The driver and pedestrian exited the residence through the front door. The driver then left the pedestrian on the front porch while she went to the garage to back the Ford to the front porch to load the pedestrian in the vehicle. The driver did not place a wooden/iron rod barrier across the top of the stairway of the porch as she normally would do, and the pedestrian climbed down the stairs and walked toward the garage. Meanwhile the driver backed out of the garage and down the driveway initially looking out of the open left front door and then through the rearview mirror. The driver did not see the pedestrian behind the vehicle, and the back bumper impacted the pedestrian, knocked him down, and the right rear tire ran over the pedestrian's head. The pedestrian sustained a crushed skull and was pronounced dead 90 minutes following the incident.

The driver stated in her interview that before backing the Ford, she checked her rearview and right side view mirrors, but looked rearward out of the open left front door as she started the backing maneuver. She indicated that once the Ford's front doors were out of the garage, she began to view through the rearview mirror as she backed up. The on-site investigation and the visibility study indicated that the pedestrian was behind the case vehicle and within the Ford's rear blind zone at this point. The location of the pedestrian when the driver got in the vehicle and checked her rearview and right side view mirror and then looked rearward out of the open left front door as she started backing could not be determined.

CRASH CIRCUMSTANCES

Crash Environment: The Ford was parked in a garage at the north end of a one-lane, private dirt/gravel driveway, that traversed in a northwest-southeast direction. The width of the driveway was 5.5 meters (18.0 feet). This driveway intersected a two-lane, undivided, county roadway that

traversed in a northeast-southwest direction. The residence was situated perpendicular to the driveway and parallel with the county roadway, and the garage was located behind and northeast of the residence (**Figure 1**). Normally, both the driver and pedestrian leave the residence through the front door. As a matter of routine, the driver would leave the pedestrian on the front porch, sometimes with a wooden/iron rod barrier that would be placed across the top of the stairway so the pedestrian would not be able to go down the stairs and out into the yard and/or driveway (**Figure 2**). While the pedestrian waited on the porch, the driver would back the Ford from the garage to a location where the driver could load the child into the vehicle. This "routine" occurred because the garage was crowded with family belongings and there was not very much room surrounding the Ford, making it easier to load the child once the Ford was backed outside of the garage. Most of the time, according to the driver, the Ford was parked outside of the garage but occasionally, in the garage as on the day of the incident. The incident occurred in the driveway as the driver backed out of the garage. At the time of the incident, the light condition was daylight, the atmospheric condition was clear, and the driveway was dry. At the point of impact, the driveway grade was 1.6%, negative in the direction of backing. The grade was level at the Ford's parked location in the garage. There was a minivan parked in the driveway (**Figure 1**), behind and to the right (i.e., northeast) of the Ford's path of travel, but the minivan was far enough away such that it was not an obstruction to the driver's view. The site of the incident was rural residential. See the Scene Diagram at end of this report.

Figure 1: On-scene sheriff's photo showing residence, porch, driveway, Ford, and minivan

Figure 2: On-scene sheriff's photo showing front porch of residence, arrow shows location of wooden/iron rod barrier following incident

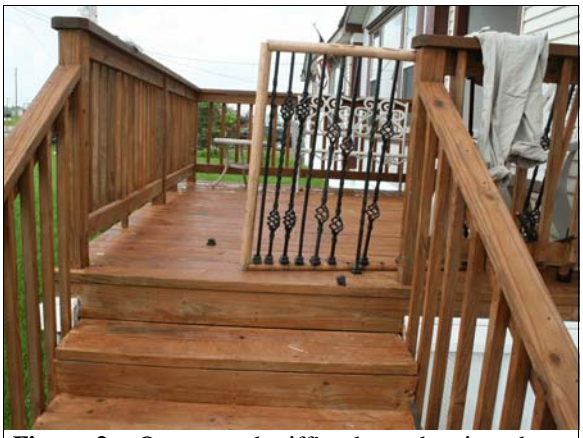


Figure 3: On-scene sheriff's photo showing close view of wooden/iron rod barrier used on porch of residence

Pre-Crash: On the day of the incident, the driver left the pedestrian on the porch, in accordance with her normal routine, but the driver did not place the wooden/iron rod barrier all the way across the top of the stairs to keep the pedestrian from going down the stairs (**Figure 3**). The driver walked around the east corner of the residence and directly to the garage (**Figure 4** below)

where she opened the overhead door by hand. The driver then approached the Ford, which was facing northwest, from the driver's side and got in. According to the driver, she checked her rearview and right side view mirrors, but did not check her left side view mirror because she kept the left front door open to look out of while backing up. She estimated the time between entering the Ford and beginning the backup maneuver was less than ten seconds. Her intent was to back up in a southeasterly direction to the sidewalk in front of the residence–a distance of approximately 13 meters (~43 feet) southeast of the garage, and then load the pedestrian into the Ford. Meanwhile, the pedestrian had gotten down the stairs of the porch and had walked into the driveway, likely with one of the iron rods from the barrier in his hands, which was subsequently found adjacent to his final rest position. There were no other adults or children in the driveway or yard. The Ford's driver stated she did not see the pedestrian and made no avoidance maneuvers prior to the incident. The incident occurred in the driveway.

Figure 4: Ford driver's travel path around corner of residence toward garage; Ford and minivan along right side of driveway

Figure 5: On-scene sheriff's photo showing blood spot denoting pedestrian's final rest position and approximate area of impact; Note: iron rod from stairway barrier pedestrian was most likely carrying

Crash: The driver began to back the Ford southeastward while looking rearward out of the open left front door. She turned the steering wheel slightly to the left as she backed. According to the driver, once the Ford's front doors were out of the garage, she braked but didn't come to a complete stop, and began to look through the rearview mirror as she continued backing. The driver backed up approximately 10.5 meters (~34 feet) where the back bumper of the case vehicle impacted and knocked down the pedestrian. The driver was unable to give an estimate of her impact speed, and there was insufficient information to determine an impact speed. According to the detective from the sheriff's department, the driver stated she felt a bump and stopped the Ford. According to the Sheriff's Department Incident Report, the right rear tire of the case vehicle had passed over the pedestrian's head crushing his skull. A small puddle of blood and brain matter was left by the pedestrian at final rest, 9.9 meters (32.5 feet) southeast of the garage door (**Figure 5**).

Post-Crash: Based on the available information, the driver exited the Ford and found the pedestrian approximately 1 meter (~3 feet) forward of the right rear axle (**Figure 5**) indicating that the Ford had traveled approximately 2.1 meters (~7 feet) from impact to final rest. The driver gathered the pedestrian in her arms and ran into the street screaming for help. A neighbor

called police and emergency medical services. The pedestrian was transported by ambulance to the hospital and was pronounced dead 90 minutes following the incident. The sheriff's department incident report indicated that the pedestrian sustained a crushed skull.

CASE VEHICLE

The 2004 Ford Explorer Sport Trac XLT was a rear wheel drive, four-door, sport utility/pickup truck (VIN: 1FMZU67K34U------) and was equipped a 4.0L, V-6 engine; automatic transmission; four wheel, anti-lock brakes; and redesigned driver and front right passenger air bag inflators. Furthermore, the Ford was equipped with tinted glass in the second row side windows (**Figure 5** above) and backlights (**Figures 6** and **7** above). The front side windows were not tinted. The Ford was not equipped with a backup/parking aid.

The distance from the ground to the Ford's beltline was 117 centimeters (46.1 inches). The distance from the ground to the bottom of the back bumper was 44 centimeters (17.3 inches). The distance from the ground to the bottom of the exhaust pipe was 32 centimeters (12.6 inches). The Ford's wheelbase was measured as 320 centimeters (126.0 inches). The specified rear overhang was 115 centimeters (45.4 inches), and the specified overall length was 523 centimeters (205.9 inches).

The Ford's recommended tire size was P255/70R16. The Ford was equipped with P275/45R20 tires (**Figure 8**) at the time of the incident, which would have lowered the vehicle only 51 millimeters (0.2 inch) assuming proper tire inflation. For an unknown reason, these tires were removed from the Ford prior to this contractor's on-site investigation. The Ford was equipped with the recommended size tires at the time of the inspection.

Figure 6: Ford's back viewed from left of back showing no apparent damage from pedestrian contact

Figure 7: Ford's back viewed from right of back showing no apparent damage from contact with pedestrian

Figure 8: Close-up of one of the tires on the Ford at the time of the incident

There was no evidence of pedestrian contact to the Ford's back bumper, exhaust pipe or right rear tire (**Figures 6** and **7** above). Based on the available information and the Collision Deformation Classification (CDC) guidelines for pedestrian impacts, a CDC was determined to be: **06-BRLN-1** (**180** degrees). The Ford was not damaged in the incident and was not towed. It was retained by the owner.

CASE VEHICLE DRIVER

The Ford's driver [23-year-old, White (Hispanic) female; 173 centimeters and 102 kilograms (68 inches, 225 pounds)] indicated she had purchased the vehicle new in 2004 and drove it daily. The driver had no vision deficiency and was not wearing sunglasses at the time of the incident. The driver was not transported by ambulance to the hospital, and she did not sustain any police-reported injuries as a result of this incident.

CASE VEHICLE VISIBILITY STUDY

A visibility study was conducted during the Ford's inspection in order to determine the nominal blind zone behind the Ford as well as the right "C"-pillar blind zone. In addition, the approximate field of view of both side view mirrors and the rearview mirror was also assessed. Assessments for the nominal blind zone behind the Ford were made by a sheriff's Detective looking over his right shoulder as well as through the rearview mirror. The Detective (i.e., surrogate driver) was 183 centimeters (72 inches) in height and his ground to eye height (when sitting in the Ford's left front seat) was measured as 153 centimeters (60.2 inches). Due to the Ford driver's emotional condition, it was not possible to determine her eye height. The Ford's driver had the left front seat adjusted to the approximate middle track position. The surrogate driver left the seat in this position when the visibility measurements were taken. The standard target: 71 centimeters (28 inches) high, was used for the visibility observations. Please refer to the Nominal Visibility Diagram at the end of this report when reading the following discussion.

Figure 9: View out of backlight from driver's seat of exemplar Ford; back right head restraint was in the full up position in the Ford involved in the incident

For the assessment of the blind zone behind the Ford, the surrogate driver was asked to look over his right shoulder out of the backlight (**Figure 9** and **Figure 10**[1] below). The target was positioned behind the Ford and moved rearward until it came into the driver's view. It was necessary to move the target rearward from the back of the vehicle 8.4 meters (27.6 feet) before the driver could see it (**Figures 11** and **12** below). At this point, the target was moved to the right from the vehicle's approximate centerline 6.4

[1] The measurements reported pertaining to the target were taken on the case vehicle. The photographs through the backlight and the rearview mirror were taken on an identical exemplar Ford.

meters (21.0 feet) where it became obstructed by the back right head restraint, which was in the full up position. The target was then moved an additional 5.7 meters (18.7 feet) to the right where it became visible again through the right rear window. The target was then returned to the centerline and moved to the left. Once the target was moved 2.6 meters (8.5 feet) to the left, the surrogate driver lost view of the target because he could not turn far enough to his right to see it.

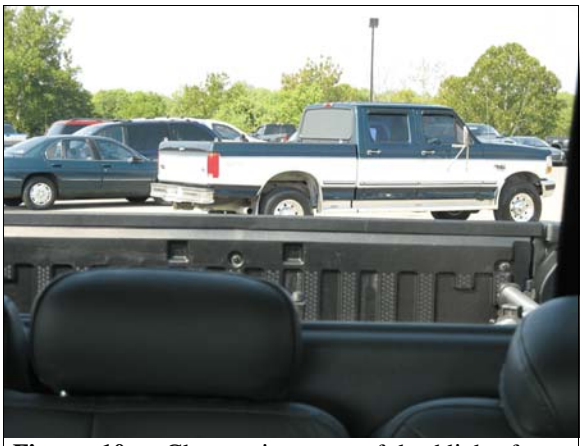


Figure 10: Closer view out of backlight from driver's seat of exemplar Ford

Figure 11: Arrow shows location where target (tripod) became visible to Ford's surrogate driver when looking over right shoulder–8.4 meters (27.6 feet) rearward of back of Ford

Figure 12: Closer view of target (tripod) where it became visible to Ford's surrogate driver when looking over right shoulder–8.4 meters (27.6 feet) rearward of back of Ford

The surrogate driver was then asked to view behind the Ford through the rearview mirror (**Figure 13**[1]). The target was not visible to the driver until it was moved rearward from the back of the vehicle 8.8 meters (28.9 feet). When moved 2.7 meters (8.9 feet) to the right of the vehicle's approximate centerline, the target became obstructed by the back right head restraint. It was not visible to the surrogate driver again when moved further to the right. When moved 2.9 meters (9.5 feet) to the left of the approximate centerline, the target became obstructed by the reflection of the driver's head in the rear view mirror.

Figure 13: View through rearview mirror from driver's seat of exemplar Ford

The side view mirrors were not adjusted by anyone since the date of the incident. The target was placed at each back corner of the vehicle and moved outward until the driver could no longer see it in the mirror. For the right side view mirror, the target had to be moved laterally from the back right corner 2.6 meters (8.5 feet) before it went out of the surrogate driver's view. For the left side view mirror, the target had to be moved laterally from the back left corner 1.4 meters (4.6 feet) before it went out of the surrogate driver's view. In addition, viewing down the left side of the vehicle with the left front door open presented an unobstructed view down the left side of

the vehicle and to the back left of the vehicle; however, the area directly behind the vehicle was in the blind zone.

The driver stated in her interview that before backing the Ford, she looked through the rearview and right side view mirrors, but looked out of the open left front door as she started the backing maneuver. She indicated that once the Ford's front doors were out of the garage, she began to view through the rearview mirror as she backed up. The on-site investigation and the visibility study indicated that the pedestrian was behind the Ford and within the Ford's rear blind zone at this point. The location of the pedestrian when the driver got in the vehicle and checked her rearview and right side view mirror and then looked out of the open left front door as she started backing could not be determined.

PEDESTRIAN

The pedestrian [18-month-old, White (Hispanic) male; 56 centimeters and 15 kilograms (22 inches, 33.5 pounds)] was the son of the driver. He was reportedly wearing an orange T-shirt, blue jeans, and white sneakers. He was transported from the scene by ambulance to a hospital. He sustained critical injuries and was pronounced dead 90 minutes later.

PEDESTRIAN INJURIES

The sheriff's department incident report indicated that the pedestrian sustained a crushed skull. The sheriff's detectives indicated that brain matter was found on the driveway. The table below shows the pedestrian's injuries and injury mechanisms.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source (Mechanism)	Source Confidence	Source of Injury Data
1	Crushed skull	maximum 113000.6,0	Tire, right rear	Certain	Sheriff's Incident Report
2	Contusion {bruise} on left heel	minor 890402.1,2	Unknown contact mechanism	Unknown	Sheriff's Incident Report

IN-07-030

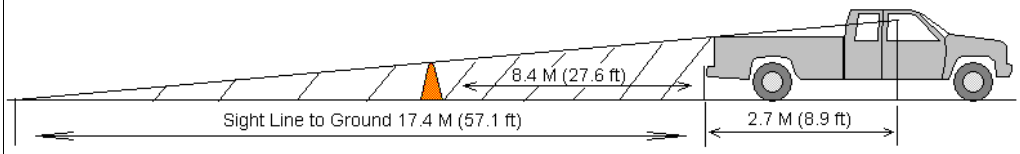
Nominal Visibility Diagram
Case Vehicle = 2004 Ford Explorer Sport Trac XLT

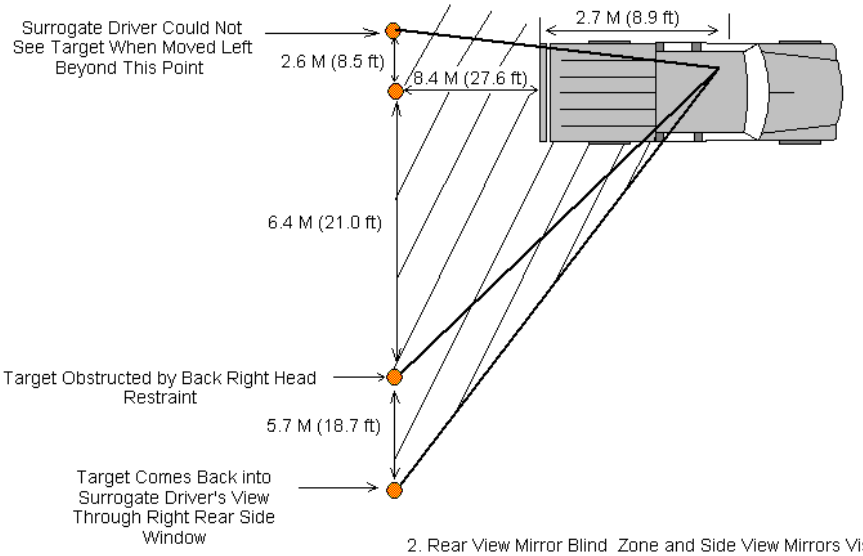
Surrogate Driver's Eye Height From Ground = 153 cm (60.2 in)

= Ford Blind Zones

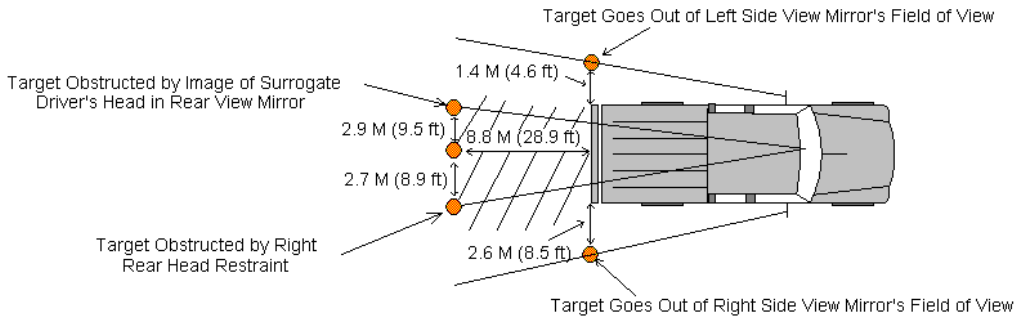
= 71 cm (28 in) High Target

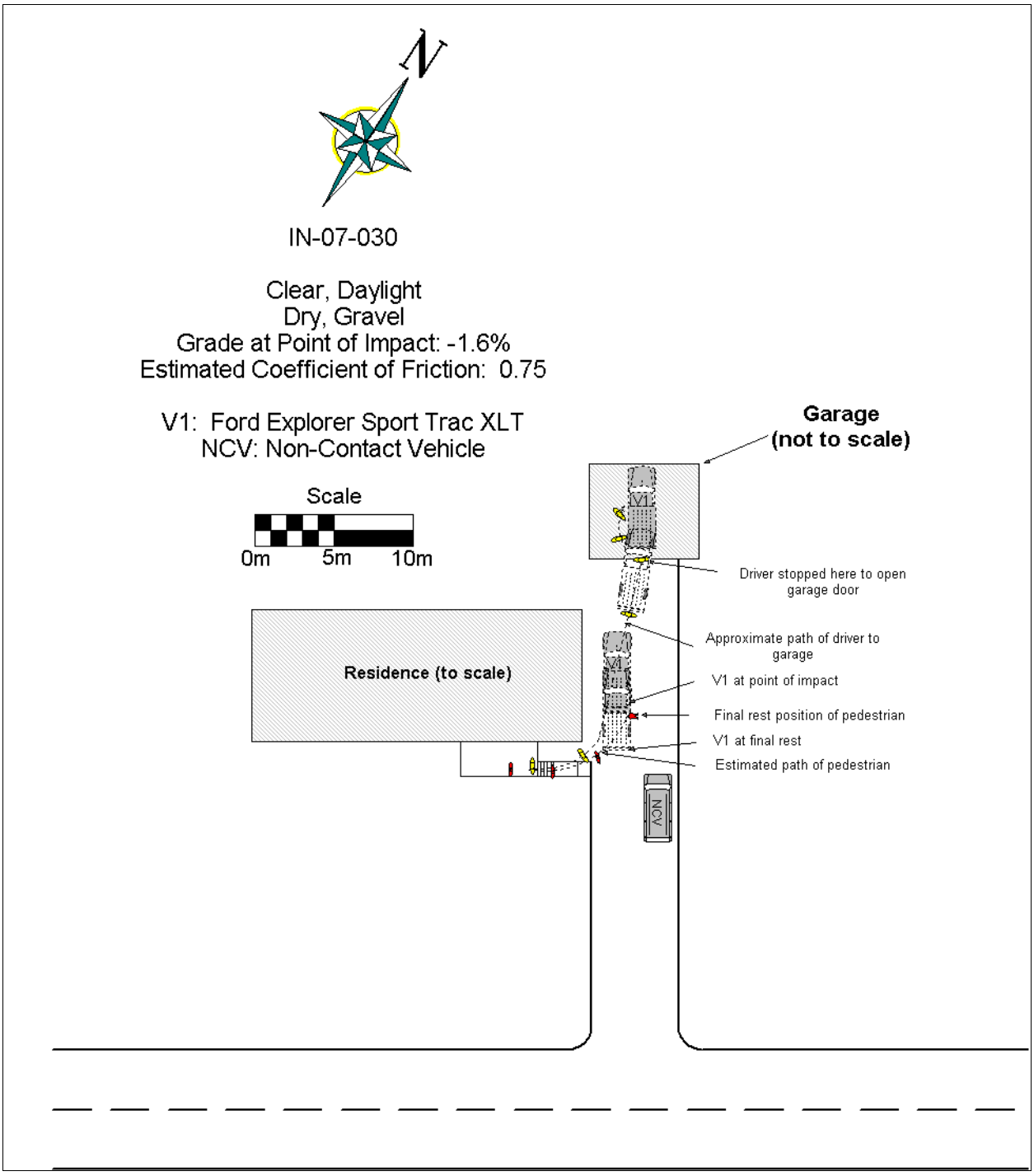
1. Distance Back of Ford
To Point a 71 cm (28 in) High Reference Target
Comes Into Surrogate Driver's View as He Looks Over Right Shoulder Out of Backlight





2. Rear View Mirror Blind Zone and Side View Mirrors Visibility Zones




N
IN-07-030
Clear, Daylight
Dry, Gravel
Grade at Point of Impact: -1.6%
Estimated Coefficient of Friction: 0.75
V1: Ford Explorer Sport Trac XLT
NCV: Non-Contact Vehicle
Scale
0m
5m
10m
Garage
(not to scale)
Residence (to scale)
V1
Driver stopped here to open garage door
Approximate path of driver to garage
V1 at point of impact
Final rest position of pedestrian
V1 at final rest
Estimated path of pedestrian
NCV

Not Applicable ☐

Reset Values

Print Forms

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

SCENE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 3 0

IDENTIFICATION

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

3. Time of Crash 1 0 1 5

Code reported military time of crash.

NOTE: Midnight = 2400
Unknown = 9999

AMBIENT CONDITIONS

4. Light Conditions

- (●) Daylight
- ( ) Dark
- ( ) Dark but lighted
- ( ) Dawn
- ( ) Dusk
- ( ) Unknown

5. Atmospheric Conditions
(*Select all that apply)*

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

6. Temperature

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

SCENE INFORMATION

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

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

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

- ( ) None
- ( ) Other vehicles
- (●) Building
- ( ) Trees
- ( ) Shrubbery
- ( ) Other (specify)_____
- ( ) Utility poles
- ( ) Signs
- ( ) Glare
- ( ) Unknown
- ( ) No driver present

9. Crash location

- (●) Driveway
- ( ) Parking Lot
- ( ) Sidewalk
- ( ) Alley
- ( ) Intersection of driveway and sidewalk
- ( ) Road / street
- ( ) Roadside / shoulder
- ( ) Other (specify)_____
- ( ) Unknown

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

- ( ) None
- ( ) Other vehicles
- (●) Building
- ( ) Trees
- ( ) Shrubbery
- ( ) Utility poles
- ( ) Signs
- ( ) Glare
- ( ) Other (specify) _____
- ( ) Unknown

11. Grade at parked position + / - 0 0 %

12. Estimated distance from parked position to impact

0 1 0 . 5 m

13. Estimated speed at impact 9 9 9 kmph

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

15. Estimated distance from impact to vehicle final rest

0 0 2 . 1 m

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

Not Applicable ☐

Reset Values

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

VEHICLE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number I N 0 7 0 3 0

VEHICLE IDENTIFICATION

2. VIN 1 F M Z U 6 7 K 3 4 U x x x x x x

3. Model Year 2 0 0 4

4. Vehicle Make (specify): Ford

5. Vehicle Model (specify): Explorer Sport Trac XLT

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 P255/70R16

7. LF Tire Size P275/45R20

8. LR Tire Size P275/45R20

9. RF Tire Size P275/45R20

10. RR Tire Size P275/45R20

Seats / Head Restraint Data

Seat Position	Seat Type (Select from below)	Head Restraint (Check if available)	Head Restraint Adjustment (select)	NOTES:
Front Left	1	☑	☑ Full Down / ☐ Mid / ☐ Full Up	
Front Middle	0	☐	☐ Full Down / ☐ Mid / ☐ Full Up	
Front Right	1	☑	☐ Full Down / ☑ Mid / ☐ Full Up	
2nd Left	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		117	Bottom of shocks = 20
Top of trunk/tailgate		70	
Bottom of bumper		44	
Trailer hitch (if applicable)		49	
Undercarriage			
	Sway bar	24	
	Axle	31	
	Differential	20	
	Other (specify): Tailpipe	32	
Sensor Height (if equipped)		N/A	
Camera Height (if equipped)		N/A	

Not Applicable ✔

Reset Values

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

Back Up / Parking Aid Form

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 3 0

PARKING AID PRESENCE

2. Type of backing/parking aid present

- ○ OEM camera
- ○ OEM ultrasonic/radar sensor
- ○ OEM combination camera-ultrasonic/radar sensor
- ○ OEM Fresnel lens
- ○ OEM interior mirrors
- ○ Aftermarket camera
- ○ Aftermarket ultrasonic/radar sensor
- ○ Aftermarket combination camera-ultrasonic radar sensor
- ○ Aftermarket Fresnel lens
- ○ Aftermarket interior mirrors
- ○ Other (specify): _____

CAMERA INFORMATION

Specify field of view measurements on diagram

3. System make/model

_____

4. Video monitor type

- ○ None present
- ○ LCD (color)
- ○ CRT (black & white)
- ○ Unknown

5. Video display size _____ cm
(Diagonal)

6. Camera location

- ○ None present
- ○ Bumper
- ○ License plate
- ○ Tailgate/Hatch/Trunk
- ○ Other (specify): _____

7. Video image quality under scene lighting conditions

- ○ None present
- ○ Good
- ○ Average
- ○ Poor (specify): _____
- ○ Unknown

8. Was the camera functioning properly

- ○ None present
- ○ Yes
- ○ No, poor image quality due to glare
- ○ No, poor image quality due to atmospheric conditions
- ○ No, camera turned off
- ○ No, camera inoperable
- ○ Unknown

ULTRASONIC/RADAR SENSOR

Specify object detection range on diagram

9. System make/model

_____

10. Auditory warning illumination

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

11. Number of sensors ____

12. Sensor locations
(Select all that apply)

- ○ No sensor present
- ○ Left bumper
- ○ Center bumper
- ○ Right bumper
- ○ License plate area
- ○ Tailgate/Hatch/Trunk

13. Was warning system functioning properly

- ○ No sensor present
- ○ Yes, system alerted driver
- ○ No, system did not alert driver
- ○ No, system turned off
- ○ No, system inoperable
- ○ Unknown

14. Did driver react to warning

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

15. Did driver report common false warnings

- ○ No sensor present
- ○ Yes
- ○ No
- ○ Unknown

No Driver Present ☐

Reset Values

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

DRIVER FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

I N 0 7 0 3 0

DRIVER PROFILE

2. Driver's Age 2 3
99 = Unknown

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

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

5. Driver's Weight 1 0 2 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): Opened garage dr
- ○ 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): Back to porch to load son
- ○ N/A
- ○ Unknown

12. Where was driver going
Description:

To pick up mother then take her to hospital

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): open LF door
- ○ 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): Out opened LF door
- ○ 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
I N 0 7 0 3 0

NON-MOTORIST PROFILE

2. Non-motorist's Age — 1 8 ◉ Months ○ Years
99 = Unknown

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

4. Non-motorist's Height — 0 5 6 cm
999 = Unknown

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

6. Medical outcome
○ Not injured
○ ER only
○ Hospitalized 1-4 days
○ Hospitalized 5 days or more
○ Treatment later
◉ Fatal
○ Unknown

7. Source of most severe injury
○ Bumper
◉ Tire
○ Undercarriage
○ Other Specify:_____
○ Ground
○ N/A
○ Unknown

8. Non-motorist impairment
(Select all that apply)
◉ No drugs or alcohol present
○ Positive for alcohol (specify BAC): _____
○ Positive for drugs (specify): _____
○ Unknown

9. Source of alcohol/drug results
○ Police reported
○ Medical Report
○ Other (specify) _____
◉ Not Tested
○ Unknown if tested

NON-MOTORIST ACTIONS

10. Non-motorist attitude
○ Standing
○ Bending at waist
○ Sitting
○ Crouching
○ Kneeling
○ On skates/skateboard
○ On bike/scooter
○ Other (specify)_____
◉ Unknown

11. Non-motorist motion
○ Not moving
○ Walking slowly
○ Walking rapidly
○ Running or jogging
○ Skipping/Hopping/Jumping
○ Falling/Stumbling/Rising
○ On skates/skateboard
○ On bike/scooter
○ Other (specify): _____
◉ Unknown

12. Non-motorist approach relative to rear of vehicle
○ Stationary
◉ From left
○ From right
○ From behind
○ Other (specify): _____
○ Unknown

13. Non-motorist first avoidance action
○ No avoidance actions
○ Stopped
○ Accelerated pace
○ Ran away (along vehicle path)
○ Jumped
○ Turned away from vehicle
○ Turned toward vehicle and braced
○ Dove or fell away from vehicle
○ Other (specify): _____
◉ Unknown

14. Non-motorist primary focus of attention
○ Striking vehicle
○ Play object
○ Person
○ Surrounding traffic
○ Animal
○ Handheld electronic (phone, MP3 player, etc.)
○ Other Object (specify) _____
◉ Unknown

15. Were any other Non-motorists present?
(Select all that apply)
◉ Alone
○ One adult present
○ One other child present
○ Multiple adults present
○ Multiple children present
○ Unknown

NON MOTORIST CLOTHING

NOTES:

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

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

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