Remote Not In Traffic Surveillance Back Over Investigation
Dynamic Science, Inc. (DSI), Case Number DS08017
2000 Ford Expedition
Utah
March 2008

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

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

Technical Report Documentation Page

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16. Abstract

This remote Not In Traffic Surveillance (NITS) back over investigation was initiated in response to an online news article reporting the death of 16-month-old male child who was involved in a back over incident. This single vehicle incident occurred during daylight hours in March 2008. The subject vehicle was a 2000 Ford Expedition sport utility vehicle that was being driven by a 37-year-old male. The front right seat was occupied by an older female–the mother of the driver. The involved child was a 16-month-old male who was the nephew of the driver. The incident took place at the end of a private driveway. The driver had pulled into the driveway to drop his mother off at her residence. The driver exited the vehicle and walked his mother to the residence and then returned to his vehicle. The driver began backing out of the driveway. The non-motorist was within the blind zone behind the vehicle when the driver began to back up and he could not see him. The driver reported that felt a little bump as he continued to back out but thought he had run over a rock. He continued backing out of the driveway and pulled out onto the intersecting street. At that time he noticed his nephew lying on the ground. The first responder to the incident was a police officer. He began emergency medical care until emergency personnel arrived. The child was transported to area trauma center where he was pronounced dead shortly after arrival.

17. Key Words	18. Distribution Statement
Not in Traffic Surveillance (NITS), back over, sport utility vehicle, fatality	

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Dynamic Science, Inc.
Crash Investigation
Case Number: DS08017

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BACKGROUND

This remote Not In Traffic Surveillance (NITS) back over investigation was initiated in response to an online news article reporting the death of 16-month-old male child who was involved in a back over incident. This single vehicle incident occurred during daylight hours in March 2008. The subject vehicle was a 2000 Ford Expedition sport utility vehicle that was being driven by a 37-year-old male (**Figure 1**). The front right seat was occupied by an older female–the mother of the driver. The involved child was a 16-month-old male who was the nephew of the driver. The incident took place at the end of a private driveway. The driver had pulled into the driveway to drop his mother off at her residence. The driver exited the vehicle and walked his mother to the residence and then returned to his vehicle. The driver began backing out of the driveway. He reported that felt a little bump as he continued to back out but thought he had run over a rock. The driver continued backing out of the driveway and pulled out onto the intersecting street. At that time he noticed his nephew lying on the ground. The first responder to the incident was a police officer. He began emergency medical care until emergency personnel arrived. The child was transported to area trauma center where he was pronounced dead shortly after arrival.

Figure 1. 2000 Ford Expedition

DSI was notified of the online article on March 3, 2008. DSI contacted the investigating police agency and requested the police report and on-scene photographs. The police report was received on May 20, 2008. Efforts were undertaken at that time to contact the driver in order to conduct an on-site investigation. DSI was assigned the case as a remote investigation on June 10, 2008. The following information was obtained from the police report and the on-scene photographs. No autopsy was conducted. The driver did not return phone calls or respond to cooperation request letters. According to the police records office, this incident was reported to the state as a traffic fatality.

SUMMARY

Incident Site

This incident took place at the end of a private driveway (**Figure 2**). A single family residence was located at the south end of the driveway. The driver of the 2000 Ford Expedition had pulled into the left side driveway to drop his mother off at her residence. The Expedition was facing south at that time. A second vehicle was parked in the right side of the driveway, also facing south. The concrete driveway was straight and oriented in a north/south direction. The end of the driveway intersected with a curved, gravel-covered residential roadway. The driveway had a slight downward grade. The driveway was approximately 9.1 m (30 ft) long and 6.7 m (22 ft) wide. According to the nearest reporting station, the temperature was 12 degrees C (53.6 degrees F), the humidity was

49%, and the winds were calm. The prima facie speed limit for residential streets in this area according to the transportation department was 40 km/h (25 mph). There was no statutory limit for the private driveway. A schematic of the site is included as Attachment A at the end of the report. A satellite image of the site is included as Attachment B.

Figure 2. Backing path of Ford Expedition (north)

Pre Incident

The driver of the 2000 Ford Expedition had driven south into the driveway and parked the vehicle. He exited the vehicle and walked his mother to the residence, which was to the east of the driveway. The driver returned to his vehicle walking west. He began backing out of the driveway in a northern direction. The 16-month old male child was in an area directly behind the Expedition. He was in the roadway, just beyond the end of the driveway. It was not known how he came to be in that position. As the driver continued backing, he turned the wheel so that the vehicle was backing in a north to west direction.

Figure 3. Look back view from beyond final rest to pre crash.

Incident

As the vehicle entered the roadway, the driver reported that felt a little bump as he continued to back out but thought he had run over a rock. Based on police and driver information, it was determined that the left rear of the Expedition struck the child, and he was then run over by the left rear tire (**Figure 3**). He sustained a crush type injury to the head. The driver continued backing out of the driveway and pulled out onto the intersecting street so that the vehicle was facing east. The driver reported that he drove forward for a short distance before looking in the rear view mirror and seeing his nephew lying on the ground.

Post Incident

The driver exited the vehicle, picked up the child, and took him into the residence. The father of the 16-month-old was in the residence and attempted to revive the child. There was apparently no phone in this residence so the driver returned to his vehicle, drove to his residence, and retrieved his cell phone. He returned to incident scene and parked his vehicle in the position shown in Figure 1. Approximately 10 minutes after the incident, a call was placed by the driver to 911. The first responder was a police officer. He began emergency medical care until emergency personnel arrived. The child was transported to area trauma center where he was pronounced dead shortly after arrival.

VEHICLE DATA - 2000 FORD EXPEDITION

The 2000 Ford Expedition was identified by the Vehicle Identification Number (VIN): 1FMRU1662YLxxxxxx. The Expedition was a four-door sport utility vehicle that was equipped with a 4.6 liter, 8-cylinder engine, 4-speed automatic transmission, 4-wheel drive, and anti-lock brakes. P255/70R16 tires were recommended for this vehicle. The vehicle manufacturer's recommended cold tire pressure was 207 kPa (30 psi) for the fronts and 241 kPa (35 psi) for rears.

The seating in the Ford Expedition was configured with front bucket seats. The seat type and folded status for the second row was not known, and it was not known if this vehicle was configured with third row seating.

The exterior of the Ford was white in color. The glazing was clear and the side/backlight glazing were tinted. There was a label affixed to the center of the backlight that partially obstructed the driver's view to the rear.

Parking Aids/Sensors

The 2000 Ford Expedition was not equipped with any parking aids or sensors.

Vehicle Dimensions

Dimensions obtained from Canadian vehicle specifications and an exemplar vehicle. Seated eye height was estimated using a surrogate driver seated at the height of a 50th percentile male[1]. Eye position forward was estimated using the position of the surrogate driver with the seat in the middle track position.

Ground to belt line:	128 cm (50.3 in)
Ground to top of trunk/tailgate:	128 cm (50.3 in)
Ground to top of rear bumper:	73 cm (28.7 in)
Ground to bottom of rear bumper:	50 cm (19.7 in)
Surrogate driver's seated eye height from seat bottom:	79 cm (31 in)
Surrogate driver's seated eye height from ground:	162 cm (63.8 in)
Overall vehicle height:	194 cm (76.3 in)
Overall vehicle width:	200 cm (78.7 in)
Overall vehicle length:	520 cm (204.7 in)

[1]The Measure of Man and Woman, Whitney Library of Design, 2001

Rear overhang:	119 cm (46.8 in)
Track width:	166 cm (65.3in)
Longitudinal distance between rear most projection and front door latch pillar:	247 cm (97.2 in)
Distance from estimated eye position to tailgate:	10 cm (3.9 in)

Rear Visibility Study

A visibility study was conducted in order to determine the nominal blind zone behind the vehicle as well as the nominal blind zone of both side view mirrors. Measurements were taken using an exemplar 2000 Ford Expedition with the second seat folded down. The status of the second seat in the subject vehicle was not known. The standard 71 cm (28 in) high target was used to obtain the measurements. The measurements were taken on a paved level surface.

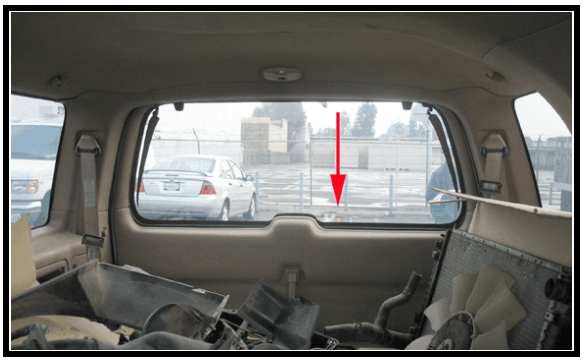


Figure 4. View through backlight from driver's seat; arrow shows target (exemplar vehicle)

The driver's estimated seated eye height when measured from the seat cushion was 79 cm (31 in) and when measured from the ground was 162 cm (64 in). The estimated seated eye height corresponded with the 50th percentile of male body measurements. The SCI investigator was able to duplicate the driver's seated eye height by measuring his own eye height from the seat cushion and ground.

The initial set of measurements were taken with the investigator looking over his right shoulder through the backlight (**Figure 4**). The target was moved aft of the rear bumper along the vehicle's centerline until it became visible to the investigator. The point at which the target became visible to the investigator measured 4.57 m (15 ft) aft of the rear bumper. That measurement was used as the point of origin for two sets of lateral measurements which were then taken. Measurements taken laterally to the left and right resulted in a visibile zone that could be viewed through the backlight. The lateral measurements were taken from the vehicle's center line to the left and right sides of the backlight until the target was out of view due to the presence of the D-pillars. The target was out of view due to the left D-pillar at a distance of 1.25 m (3.28 ft) lateral to the vehicle's longitudinal center. The target was out of view due to the right D-pillar at a distance of 2.75 m (8.86 ft) lateral to the vehicle's longitudinal center. At 4.57 m (15 ft) aft of the rear bumper, the visible zone from the left D-pillar to the right D-pillar measured 4 m (13.12 ft) in width. The roadway surface became visible to the at 9.14 m (30.0 ft) aft of the rear bumper.

A second set of measurements were taken as the investigator used the rear view mirror to view the target through the backlight and above the vehicle's center stop lamp. When the investigator used the rear view mirror to look through the backlight, the view down the vehicle's centerline was obscured by the center stop lamp. The target was moved aft of the rear bumper along the vehicle's

centerline until it became visible above the center stop lamp. The point at which the target became visible to the investigator measured 5.9 m (19.3 ft) aft of the rear bumper. That measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visible zone that could be viewed through the backlight. The lateral measurements were taken from the vehicle's center line to the left and right sides of the backlight until the target was out of view due to the presence of the D-pillars. The target was out of view due to the left D-pillar at a distance of 1.57 m (5.15 ft) lateral to the vehicle's longitudinal center. The target was out of view due to the right D-pillar at a distance of 2 m (6.56 ft) lateral to the vehicle's longitudinal center. At 5.9 m (19.3 ft) aft of the rear bumper, the visible zone from the left D-pillar to the right D-pillar measured 3.57 m (11.71 ft) in width.

Figure 5. View through right side view mirror from driver's seat, arrow shows target where it begins to enter the mirror's lateral field of view (Note: convex mirror not present on subject vehicle)

A third set of measurements were taken as the investigator used the rear view mirror to view the target through the backlight and slightly lateral to the center stop lamp. When the investigator used the rear view mirror to look through the backlight, the view down the vehicles centerline was obscured by the vehicle's center stop lamp. The target was moved aft of the rear bumper and slightly lateral to the stop lamp until it became visible to the investigator. The point at which the target became visible to the investigator measured 4.36 m (14.3 ft) aft of the rear bumper. That measurement was used as the point of origin for a set of lateral measurements which were then taken. Measurements taken laterally to the left and right would result in a visible zone that could be viewed through the backlight. The lateral measurements were taken from the vehicle's center line to the left and right sides of the backlight until the target was out of view due to the presence of the D-pillars. The target was out of view due to the left D-pillar at a distance of 1.3 m (4.27 ft) lateral to the vehicle's longitudinal center. The target was out of view due to the right D-pillar at a distance of 1.57 m (5.15 ft) lateral to the vehicle's longitudinal center. At 4.36 m (14.3 ft) aft of the rear bumper, the visible zone from the left D-pillar to the right D-pillar measured 2.87 m (9.42 ft) in width.

A fourth seat of measurements were then taken to calculate the left and right lateral visible zones when using the side view mirrors. From a seated posture, the side views were examined. Since the SCI investigator was using an exemplar vehicle, he adjusted the side mirrors appropriately for the driver's seated eye height. The target was placed at the left rear bumper. The target was moved further to the left until the target became visible through the left side view mirror. The target was then moved laterally to the left until the target was no longer visible. These measurements resulted in a visible zone which could be viewed through the side view mirror. This process was repeated on the right side of the vehicle (**Figure 5**). The visible zone lateral to the left bumper measured 86 cm (2.82 ft) in width. The visibility zone lateral to the right bumper measured 1.36 m (4.46 ft) in width. The area between the left and right visibile zones resulted in a blind zone which measured 2.04 m (6.6 ft) in width. The vehicle's maximum width measured 2 m (6.56 ft).

The target was then placed at 4.57 m (15.0 ft) aft of the rear bumper. Lateral measurements were taken to the left and right to the points at which the investigator could view the target through the side view mirrors. The area between the left and right visible zones resulted in a blind zone. At 4.57 m (15.0 ft) aft of the rear bumper, the left and right lateral visible zones measured 1.88 m (6.17 ft) and 3.26 m (10.7 ft), respectively. The blind zone measured 1.89 m (6.2 ft) in width. The width of the nominal blind zone when using the side view mirrors diminished approximately 15 cm (5.9 in) at a distance of 4.57 m (15.0 ft) aft of the rear bumper versus at the rear bumper.

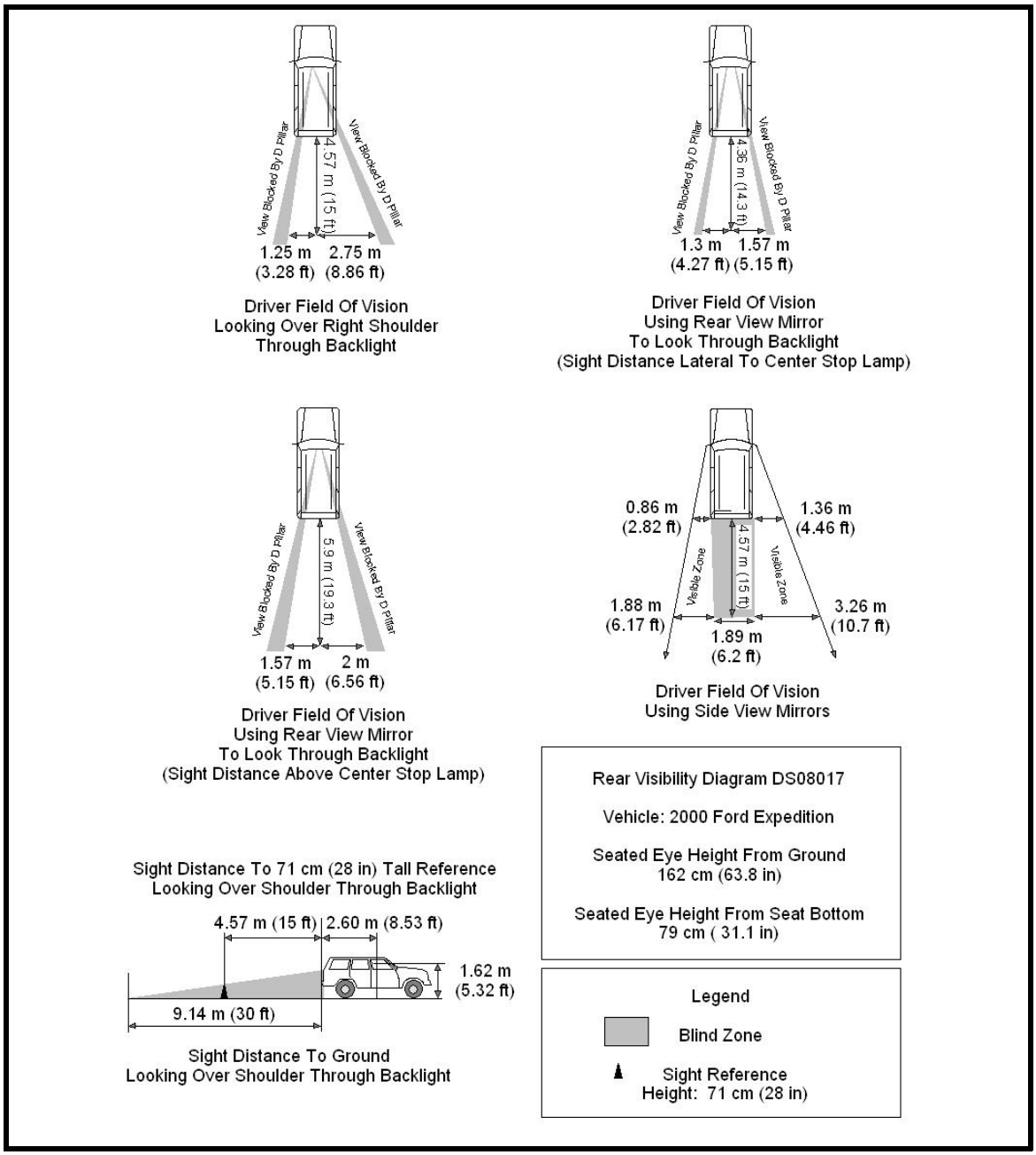


Figure 6. Nominal visibility diagram

Vehicle Damage

There was no damage and no evidence of non-motorist contact to the Ford's back bumper or rear tires. Based on the driver's description of the incident, the physical evidence in the driveway area, and the Collision Deformation Classification (CDC) guidelines for pedestrian impacts, a CDC of 06BLLN1 was assigned to describe the non-motorist's contact to the back bumper.

Driver Data

The driver of the Ford was a 37-year-old male. His height and weight are not known. He was the uncle of the involved non-motorist. He was taken from the scene to a local medical center where he was tested for alcohol. The results of the test were negative.

Non-motorist Data

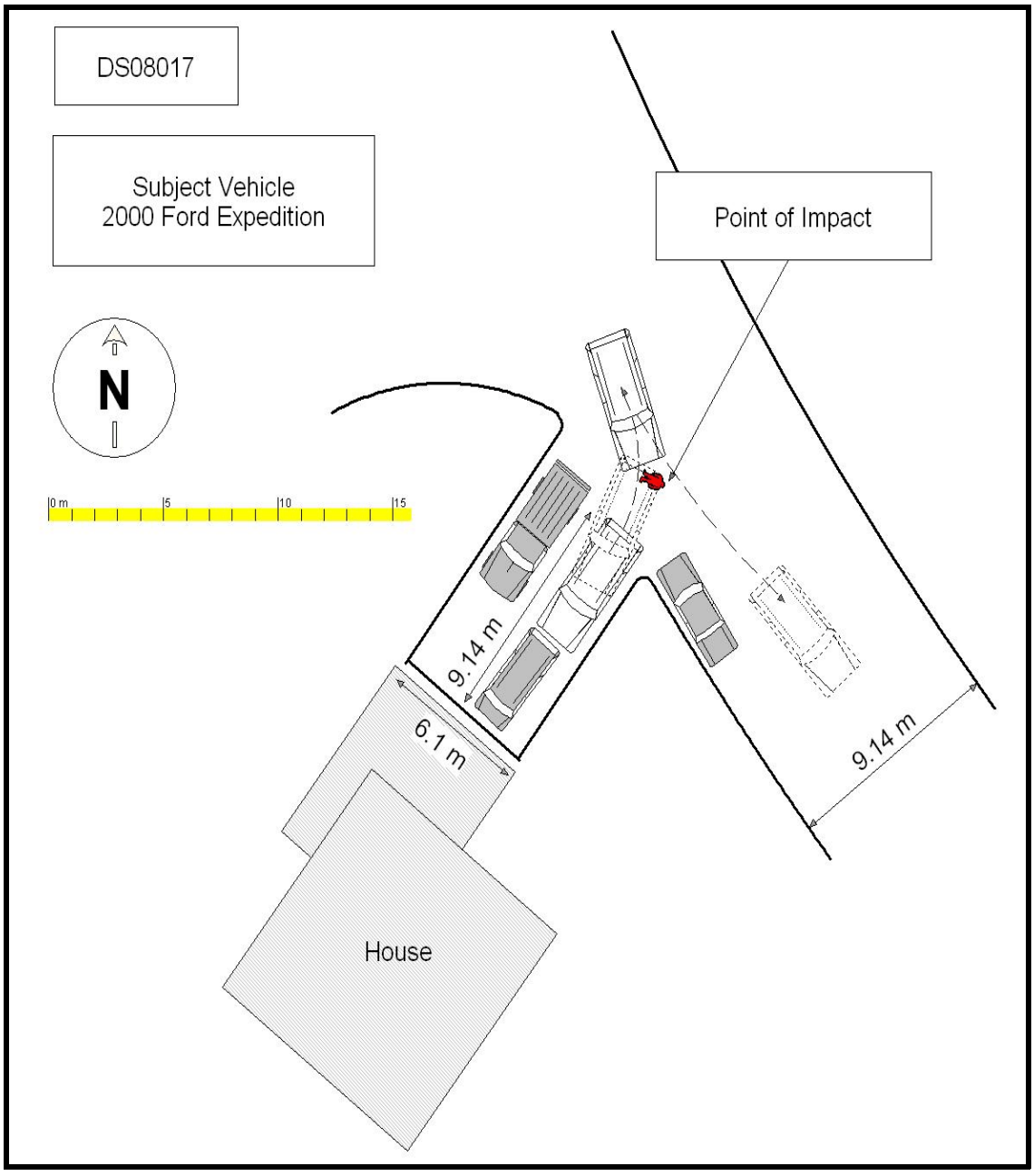
The non-motorist was a 16-month old male child. His height and weight are not known. The child was living with his parents in the private residence associated with the incident site.

Non-motorist Injuries

Injuries obtained from police report and on-scene photos.

Injury	Injury Severity (AIS 90/Update 98	Injury Mechanism	Confidence Level
Blunt head trauma	115099.7,0	Left rear tire	Certain
Facial abrasions, left	290202.1,2	Ground	Certain
Facial abrasions, right	290202.1,1	Left rear tire	Certain

Attachment 1. Scene Diagram



Attachment 2. Satellite Image

Attachment 3. Field Data Forms

Not Applicable ☐

Reset Values | Print Forms

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

SCENE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

D S 0 8 0 1 7

IDENTIFICATION

2. Date of Crash 0 3 / X X / 0 8

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 0 %

12. Estimated distance from parked position to impact

0 0 3 . 3 m

13. Estimated speed at impact 9 9 9 kmph

14. Grade at impact +/ - 0 0 0 %

15. Estimated distance from impact to vehicle final rest

9 9 9 . 9 m

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

Not Applicable ☐

Reset Values

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

VEHICLE FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number D S 0 8 0 1 7

VEHICLE IDENTIFICATION

2. VIN 1 F M R U 1 6 6 2 Y L X X X X X X

3. Model Year 2 0 0 0

4. Vehicle Make (specify): FORD

5. Vehicle Model (specify): EXPEDITION

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	☑	Label/sign
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 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	Type/status unknown
Front Middle	0	☐	Full Down / Mid / Full Up	
Front Right	1	☑	Full Down / Mid / Full Up	
2nd Left	4	☐	Full Down / Mid / Full Up	
2nd Middle	4	☐	Full Down / Mid / Full Up	
2nd Right	4	☐	Full Down / Mid / Full Up	
3rd Left	99	☐	Full Down / Mid / Full Up	
3rd Middle	99	☐	Full Down / Mid / Full Up	
3rd Right	99	☐	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		128	
Top of trunk/tailgate		128	
Bottom of bumper		50	
Trailer hitch (if applicable)		35	
Undercarriage			
	Sway bar	25	
	Axle	29	
	Differential	18	
	Other (specify): _____	N/A	
Sensor Height (if equipped)		N/A	
Camera Height (if equipped)		N/A	

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
Not In Traffic Surveillance

1. Case Number

D S 0 8 0 1 7

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
- ☐ Sensor present, did not sound

15. Did driver report common false warnings

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

Not Applicable

No Driver Present ☐

Reset Values

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

DRIVER FORM

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number

D S 0 8 0 1 7

DRIVER PROFILE

2. Driver's Age 3 7
99 = Unknown

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

4. Driver's Height 9 9 9 cm
999 = Unknown

5. Driver's Weight 9 9 9 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): Nephew
- ☐ 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:

Returning home

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

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

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

16. What direction was the driver looking during backing maneuver
(Select all that apply)

- ☐ Straight ahead
- ☐ Right
- ☐ Left
- ☐ Rearward
- ☐ At object inside the car
- ☐ At mirrors
- ☐ Other (specify): _____
- ☐ N/A
- ☉ Unknown

17. Was the driver distracted during back up maneuver
(Select all that apply)

- ☐ No non-driving activities

External

- ☐ Looking at other vehicles
- ☐ Looking at other non motorist
- ☐ Looking at intended turn destination
- ☐ External focus, not specified
- ☐ Other external focus (specify): _____

Internal

- ☐ Looking at other occupant
- ☐ Talking to passenger
- ☐ Dialing phone
- ☐ Talking on phone
- ☐ Listening to radio/cd/portable playback device
- ☐ Adjusting radio/cd player
- ☐ Adjusting climate controls
- ☐ Using a device/controls integral to vehicle (specify): _____
- ☐ Reading/adjusting navigation system
- ☐ Eating or drinking
- ☐ Smoking related
- ☐ Retrieving fallen object (specify): _____
- ☐ Internal focus, not specified
- ☐ Focused on other internal object (specify): _____
- ☐ N/A
- ☉ Unknown

18. Driver avoidance actions prior to impact
(Select all that apply)

- ☉ None
- ☐ Braking
- ☐ Steering left
- ☐ Steering right
- ☐ Accelerating
- ☐ Other (specify): _____
- ☐ N/A
- ☐ Unknown

19. Did driver see struck non motorist prior to impact
(Select all that apply)

- ☉ No, never saw non motorist
- ☐ Saw non motorist prior to entering vehicle
- ☐ Saw non motorist after entering vehicle
- ☐ Other (specify): _____
- ☐ N/A ☐ Unknown

20. Est time between start of backing and impact

- ☐ <2 or = 1 second
- ☉ 2-5 seconds
- ☐ 6-10 seconds
- ☐ > 10 seconds
- ☐ N/A ☐ Unknown

21. Driver interior sightline obstructions
(Select all that apply)

- ☐ Pillar
- ☉ Headrest
- ☐ Cargo
- ☐ Other occupant
- ☐ Other (specify) _____
- ☐ Unknown
- ☐ None

22. Recent experience driving this vehicle

- ☐ More than 10 times the last three months
- ☐ 6-10 times the last three months
- ☐ 2-5 times the last three months
- ☐ Less than 2 times the last three months
- ☐ First time driving this vehicle
- ☐ N/A
- ☉ Unknown

23. Frequency of driving in this parking lot/driveway

- ☐ Daily
- ☐ Weekly
- ☐ Several times a month
- ☐ Monthly
- ☐ Rarely
- ☐ First time in lot/driveway
- ☐ N/A ☉ Unknown

24. Driver Impairment
(Select all that apply)

- ☉ No drugs or alcohol present
- ☐ Alcohol present (specify BAC): _____
- ☐ Drugs present (specify):_____
- ☐ Unknown

25. Source of alcohol/drug results

- ☉ Police reported
- ☐ Medical record
- ☐ Other (specify)_____
- ☐ Not Tested
- ☐ Unknown if tested

Not Applicable ☐

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

Non Motorist Form

Reset Values

Special Crash Investigations
Not In Traffic Surveillance

1. Case Number
D S 0 8 0 1 7

NON-MOTORIST PROFILE

2. Non-motorist's Age — 1 6 ◉ Months ☐ Years
99 = Unknown

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

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

5. Non-motorist's Weight — 9 9 9 kg
999 = Unknown

6. Medical outcome

☐ Not injured
☐ ER only
☐ Hospitalized 1-4 days
☐ Hospitalized 5 days or more
☐ Treatment later
◉ Fatal
☐ Unknown

7. Source of most severe injury
☐ Bumper
◉ Tire
☐ Undercarriage
☐ Other Specify:_____
☐ 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)			
Pink				

	Clothing	Color	Fabric	Texture	Weight
HEADWEAR	Hat	None			
	Helmet	None			
	Hood	None			
	Other (specify): _____				
	Unknown				
UPPER BODY	Short Sleeve	Unknown			
	Long Sleeve	Unknown			
	Light Jacket	Unknown			
	Heavy Jacket	Unknown			
	Other (Specify): _____				
	Unknown				
LOWER BODY	Shorts	Unknown			
	Pants	Unknown			
	Shoes	Unknown			
	Other (specify): _____				
	Unknown				