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ON-SITE ROLLOVER INVESTIGATION

CASE NUMBER - IN08045
LOCATION - TEXAS
VEHICLE - 2008 FORD ESCAPE XLT
CRASH DATE - September 2008

Submitted:

July 24, 2009

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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.

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16. *Abstract*

This report covers an On-Site Rollover Investigation that involved a 2008 Ford Escape XLT, which rolled over after being impacted on the left side plane by a 2003 Ford Escape Limited. The focus of this on-site investigation was on the rollover of the 2008 Ford. The 2008 Ford was occupied by a restrained 62-year-old male driver and a restrained 28-year-old male front passenger. The 2008 Ford was traveling south through a 4-leg intersection when it was impacted on the left side plane by the westbound 2003 Ford. The impact triggered the deployment of the 2008 Ford's front left seat back-mounted side impact air bag and the both side curtain air bags. The impact caused the 2008 Ford to rotate counterclockwise (CCW) and it rolled over onto its right side. The vehicle's front right seat back-mounted side impact air bag also deployed during the crash. The vehicle slid on its right side as it continued to rotate CCW and the right side wheels impacted a median curb. The curb impact caused the vehicle to roll to its left and it uprighted itself and came to final rest on the median. The front passenger was transported by ambulance to a hospital while the driver was transported later to a hospital by a friend. The driver and front passenger sustained minor injuries and were treated in the hospital emergency room and released.

17. *Key Words* Rollover Side Curtain Air Bag Motor Vehicle Traffic Crash Injury Severity		18. *Distribution Statement* General Public	
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IN08045

The focus of this on-site investigation was the rollover of a 2008 Ford Escape XLT. This crash was brought to the National Highway Traffic Safety Administration's (NHTSA) attention on November 7, 2008 by the sampling activities of the National Automotive Sampling System-General Estimates System. This investigation was assigned on November 13, 2008. This crash involved a 2008 Ford Escape XLT (**Figure 1**) and a 2003 Ford Escape Limited, which were involved in an crash that occurred within a 4-leg intersection. The crash occurred in September, 2008, at 1137 hours, in Texas and was investigated by the applicable city police department. This contractor inspected both vehicles on November 20, 2008 and inspected the crash scene on November 21, 2008. The interview with the 2008 Ford's driver was completed on November 24, 2008. This report is based on the police crash report, scene and vehicle inspections, driver interview, occupant kinematic principles, and this contractor's evaluation of the evidence.

Figure 1: The damaged 2008 Ford Escape XLT

CRASH CIRCUMSTANCES

Crash Environment: The trafficway on which the 2008 Ford was traveling was a 6-lane, divided suburban street, traversing in a north-south direction and the 2008 Ford was approaching a 4-leg intersection. The Ford's roadway had three through lanes and a left turn lane, and the intersection was controlled by multiple three-phase traffic signals. Each lane was approximately 3.3 m (10.8 ft) in width. The grass median was 19 m (62.3 ft) in width and bordered by 15 cm (6 in) curbs. The roadway pavement markings consisted of solid white lane lines and solid white pedestrian crossing lines at the intersection. The trafficway on which the 2003 Ford was traveling was a 2-way, 4-lane, undivided, suburban street, traversing in an east-west direction, and the 2003 Ford was approaching the same intersection. The vehicle was traveling in the inside lane, which was 3.2 m (10.5 ft) in width while the outside lane was 3.7 m (12.2 ft) in width. The roadway pavement markings consisted of solid white lane lines, faded, solid double yellow center lines, and a solid white stop bar at the intersection. The posted speed limit for both vehicles was 56 km/h (35 mph). At the time of the crash the light condition was daylight, the atmospheric condition was clear, and the roadway pavement was dry concrete with a positive 1.8% grade for the 2008 Ford and a positive 1.7% grade for the 2003 Ford. The traffic density was moderate at the time of the crash and the site of the crash was suburban residential. See the Crash Diagram on page 11 of this report.

Pre-Crash: The 2008 Ford was occupied by a restrained 62-year-old male driver and a restrained 28-year-old male front passenger. The driver was traveling south in the center through lane (**Figure 2**) and he intended to continue south through the intersection. The 2003 Ford's 19-year-old restrained female driver was traveling west in the inside lane and she intended to continue west

through the intersection (**Figure 3**). The 2008 Ford's driver stated during the interview that he did not see the other vehicle approaching and did not take any actions to avoid the crash.

Crash: The front of the 2003 Ford (**Figure 4**) impacted the 2008 Ford's left side plane at the left rear wheel (**Figure 5**, event 1). The 2008 Ford's direction of force was within the 10 o'clock sector and the impact force was sufficient to deploy the driver's seat back-mounted side impact air bag and both side curtain air bags. The impact caused the 2008 Ford to rotate counterclockwise (CCW). The vehicle was equipped with Electronic Stability Control (ESC), but the crash-induced rotation was significant and it rolled over (event 2) one quarter turn onto its right side (**Figure 6**). The vehicle's front right seat back-mounted side impact air bag also deployed during the crash. The vehicle slid on its right side toward the median and the right side tires impacted the median curb (**Figure 7**). The impact caused the vehicle to roll back onto its wheels and it came to final rest on the median heading southeast. The impact to the curb did not cause any damage to the vehicle's right side wheels. The initial impact caused the 2003 Ford to rotate CCW and it traveled southwest across the intersection. It came to final rest heading southwest in the mouth of the west leg of the intersection on the outside eastbound lane (**Figure 8**). The scene inspection revealed no evidence of the final rest positions of either vehicle. The police crash schematic was used to estimate the final rest positions of both vehicles.

Post-Crash: The police and emergency personnel were notified of the crash and arrived on scene in 25 minutes. Passers-by stopped and opened the 2008 Ford's left front door and the driver exited under his own power. The passers-by also assisted the front passenger in exiting the vehicle. He was transported by ambulance to a hospital. The driver was taken to a hospital later by a friend. The driver of the 2003 Ford was

Figure 2: 2008 Ford's approach to the intersection; arrows show converging trajectory of both vehicles

Figure 3: 2003 Ford's approach to the intersection; arrows show converging trajectory of both vehicles

Figure 4: Damage to front of 2003 Ford from impact with the left side plane and left rear wheel of the 2008 Ford

transported by private vehicle to a hospital. Both vehicles were towed from the scene due to damage.

Figure 5: Damage to the left rear side of 2008 Ford from impact with the front of the 2003 Ford

Figure 6: Damage to the 2008 Ford's right side plane from the rollover

Figure 7: Tire marks on median curb; arrow shows estimated area of 2008 Ford's final rest position

Figure 8: View southwest; arrow shows police reported area of final rest of the 2003 Ford

ROLLOVER DISCUSSION

The 2008 Ford's rollover mitigation features consisted of Electronic Stability Control (ESC), a rollover sensor, and rollover side curtain air bags. The NHTSA has given the vehicle a three star rollover rating on a five star scale and a Static Stability Factor of 1.13[1]. A three star rating indicates that the vehicle has a 20%-30% chance of a rollover when involved in a single vehicle crash. The specific chance of rollover for this vehicle model was given as 23%. The Static Stability Factor (SSF) is a calculation based on the vehicle's track width and height of its center of gravity. The result of the calculation is a measure of a vehicle's resistence to rollover. A

[1] www.safercar.gov, 6/18/09

higher SSF indicates a more stable vehicle. Most passenger vehicles have an SSF of 1.30 to 1.50[2]. This vehicle model also did not tip-up during the dynamic steering maneuver test in which the test vehicle is put through a fish-hook shaped steering maneuver (i.e., hard left and hard right steer) at between 56 km/h-80km/h (35-50 mph).

In this crash, the 2008 Ford's initial left side plane impact with the 2003 Ford induced a CCW rotation. While the vehicle was equipped with ESC, the impact produced a significant rate of rotation and the driver did not regain control. As the vehicle rotated CCW, the friction force on the right side wheels caused it to roll over one quarter turn onto its right side. There was insufficient crash scene evidence to identify the location of rollover initiation. The extent of rotation prior to the rollover could not be determined. The vehicle continued to rotate CCW as it slid on its right side toward the median where the right side tires impacted the 15 cm (6 in) high median curb. The driver stated that when this occurred, the vehicle uprighted itself. The vehicle traveled on the median approximately 12 m (39.4 ft) in a southeast direction and came to final rest on the median heading southeast.

CASE VEHICLE

The 2008 Ford Escape XLT was a front wheel drive, 4-door sport utility vehicle (VIN: 1FMCU03118K------) manufactured in May of 2007. The vehicle was equipped with a 3.0-liter, 6-cylinder engine, automatic transmission, 4-wheel anti-lock disc brakes, traction control, ESC, and a rollover sensor. The front row was equipped with bucket seats, adjustable head restraints, lap-and-shoulder belts, a tilt steering column, dual stage driver and front passenger frontal air bags, seat back-mounted side impact air bags, and rollover side curtain air bags that provided coverage for the front and second rows. The second row was equipped with a split bench seat with folding backs(60/40), adjustable head restraints, lap-and-shoulder belts, and Lower Anchors and Tethers for Children (LATCH) in the outboard seating positions. The vehicle's mileage at the inspection was 28,042 kilometers (17,425 miles). The specified wheelbase was 262 cm (103.1 in).

CASE VEHICLE DAMAGE

Exterior Damage: The 2008 Ford's impact with the 2003 Ford involved the rear portion of the left side plane. The left rear door, left quarter panel, left rear wheel, and rear bumper cover were directly contacted (**Figure 5**). The direct damage started 174 cm (68.5 in) rear of the left front axle and extended 154 cm (60.6 in) rearward on the left rear door and quarter panel. The crush measurements were taken at the lower door level and the residual maximum crush was 17 cm (6.7 in) occurring 20 cm (7.9 in) rear of C_5. The height of the vehicle's sill was 31 cm (12.2 in) and height of the maximum crush was 50 cm (19.7 in). The door sill differential was 11 cm (4.3 in). The table below shows the vehicle's left side crush profile.

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[2] "Trends in the Static Stability Factor of Passenger Cars, Light Trucks, and Vans", NHTSA Technical Report, DOT HS 809 868, June 2005

Units	Event	Direct Damage		Field L	C_1	C_2	C_3	C_4	C_5	C_6	Direct	Field L
		Width CDC	Max Crush								±D	±D
cm	1	154	17	180	0	3	2	3	8	0	-129	-115
in		60.6	6.7	70.9	0.0	1.2	0.8	1.2	3.2	0.0	-50.8	-45.3

The rollover involved the right side plane, with the direct damage involving the vehicle's entire right side (**Figure 6**). The extent of the damage was primarily scratching, denting and abrading of the sheet metal. There was no lateral crush to vehicle's roof structure. The right side wheelbase was unchanged and the left side wheelbase was extended 1 cm. (0.4 in.). Induced damage involved the windshield, left rear door, left quarter panel, and rear bumper cover.

Damage Classification: The 2008 Ford's Collision Deformation Classifications (CDC) were **10-LZEW-2** (**300** degrees) for the left side plane impact with the front of the 2003 Ford, and **00-RDAO-2** for the rollover. The Damage algorithm of the WinSMASH program calculated the vehicle's total Delta V for the side impact as 10 km/h (6.2 mph). The longitudinal and lateral velocity changes were -5 km/h (-3.1 mph) and 9 km/h (5.6 mph), respectively. The results of the WinSMASH program appeared reasonable. The severity of the rollover damage was based on the extent of damage to the vehicle's right side.

The vehicle manufacturer's recommended tire size was P235/70R16. The 2008 Ford was equipped with tires of the recommended size. The vehicle's tire data are shown in the table below.

Tire	*Measured Pressure*		*Vehicle Manufacturer's Recommended Cold Pressure*		*Tread Depth*		*Damage*	*Restricted*	*Deflated*
	kPa	psi	kPa	psi	milli-meters	32nd of an inch			
LF	165	24	221	32	6	7	None	No	No
LR	Flat	Flat	221	32	9	11	Sidewall abraded	No	Yes
RR	241	35	221	32	10	12	None	No	No
RF	228	33	221	32	6	7	None	No	No

Vehicle Interior: The inspection of the 2008 Ford's interior revealed no discernable occupant contact evidence and no evidence of steering rim deformation or compression of the energy absorbing steering column. The left front door, right front door, and rear hatch remained closed and operational while the right rear and left rear doors were jammed shut. All of the vehicle's window glazing was either fixed or closed. The right front and second right rear window glazing were disintegrated while the windshield glazing was in place and cracked from impact forces. The

windshield intruded vertically 16 cm (6.3 in) into the front right occupant space and 4 cm (1.6 in) into the middle of the front row. The right front door's forward upper quadrant intruded 6 cm (2.4 in) laterally into the front right occupant space (**Figure 9**).

Figure 9: Arrow shows intrusion of right front door

Figure 10: Front portion of right side curtain air bag

Figure 11: Rear portion of right side curtain air bag

AUTOMATIC RESTRAINT SYSTEM

The 2008 Ford was equipped with a Certified Advanced 208-Compliant (CAC) frontal air bag system that consisted of dual stage driver and passenger frontal air bags, an occupant weight sensor for the front passenger seating position, seat belt buckle switch sensors and retractor mounted pretensioners. The frontal air bag sensor was located on the center radiator support. The manufacturer has certified that the vehicle is compliant to the Advanced Air Bag portion of the Federal Motor Vehicle Safety Standard (FMVSS) No. 208.

The driver's frontal air bag was located in the steering wheel hub and the passenger's frontal air bag was located within the middle of the instrument panel. Neither of these air bags deployed as a result of the crash.

The vehicle's side air bag system consisted of front seat back-mounted side impact air bags and roof side rail-mounted rollover side curtain air bags. The vehicle's side impact sensors were located within the lower B- and mid C-pillars.

Both side curtain air bags were located along the roof side rails (**Figures 10** and **11**) inside the headliner and extended from the A- to C-pillar. They were designed with inflation chambers adjacent to each outboard seat position and did not have external vent ports. Each deployed side curtain air bag was 145 cm (57.1 in) in width, 48 cm (18.9 in) in height, and extended 10 cm (4 in) below the beltline . Each air bag was attached at the respective A-pillar by a 40 cm (15.7 in) cloth tether and attached to the C-pillar by a 6 cm (2.4 in) cloth tether. There was a 30 cm (11.8 in) wide gap between the center leading edge of each air bag and the A-pillar. The fold creases on the air bags indicated that they had been folded in an accordion fashion within the headliner.

The inspection of each air bag revealed no discernable evidence of occupant contact and no damage.

The driver's and front passenger's seat back-mounted side impact air bags were located in the outboard sides of the seat backs and deployed through a tear-seam. Each deployed air bag was oblong (**Figure 12**) and designed with what appeared to be a vent port located on the leading edge of the air bag. Each air bag was 30 cm (11.8 in) in width and 29 cm (11.4 in) in height. The inspection of the air bags revealed no discernable evidence of occupant contact and no damage.

Figure 12: Front passenger's seat back-mounted side impact air bag

MANUAL RESTRAINT SYSTEM

The 2008 Ford was equipped with lap-and-shoulder belts for both front row seating positions and all three second row seating positions. The driver's seat belt consisted of continuous loop belt webbing, an Emergency Locking Retractor (ELR), a sliding latch plate, and an adjustable upper anchor that was located in the middle position. The front right seat belt was equipped with a switchable ELR/Automatic Locking Retractor (ALR), a sliding latch plate, and adjustable upper anchor that was located in the full-down position. The front row seat belts were equipped with retractor-mounted pretensioners, which actuated in this crash. The second row seat belts consisted of continuous loop belt webbing, switchable ELR/ALRs, sliding latch plates and fixed upper anchors. The second row center seat belt was integrated into the seat.

The inspection of the front row passenger's seat belt systems revealed evidence that both seat belts were in use at the time of the crash. Both retractors were jammed with a length of belt extended out of the retractor consistent with usage. There were two load abrasions on the webbing of each seat belt. The driver's belt webbing had one load abrasion located 35 cm (13.8 in) from the stop button and a second abrasion located 80 cm (31.5 in) from the stop button. The front passenger's seat belt webbing had one load abrasion located 32 cm (12.6 in) from the stop button and second abrasion located 66 cm (26 in) from the stop button. The remaining seat positions were unoccupied.

CASE VEHICLE DRIVER KINEMATICS

Based on the SCI interview, the 2008 Ford's driver [62-year-old, male; 178 cm and 88 kg (70 in and 195 lbs] was seated in an upright posture with his left foot resting on the emergency brake, right foot on the accelerator, and both hands on the steering wheel at the 9 and 3 o'clock positions. The driver's seat track was adjusted 17 cm (6.7 in) rear of full-forward, which corresponded to between the middle and rear most position, and the seat back was slightly reclined. The adjustable head restraint was located in the full-up position, and the distance from

the top of the seat back to the top of the head restraint was 30 cm (11.8 in). The tilt steering column was located in the center position. The driver was not wearing glasses or contact lenses at the time of the crash.

The vehicle's left side impact with the 2003 Ford displaced the driver forward and left opposite the 10 o'clock direction of force and he loaded the lap-and-shoulder belt. While there was no discernable evidence of occupant contact, the driver's injuries and occupant kinematic principles indicate that his left arm probably loaded the deploying seat back-mounted side impact air bag and his left shoulder probably loaded the left front window sill. These contacts caused a 38.1 x 2.5 cm (15 x 1 in) abrasion on the left forearm and a 10.2 cm (4 in) diameter contusion on the left shoulder. The driver also complained of neck stiffness, which was probably due to impact force, and nerve damage to the left leg. The driver's left leg probably loaded the rear lower quadrant of the left front door panel as a result of the left side impact. As the vehicle rotated CCW and rolled over onto the right side, the driver was redirected to the right. The driver told the treating physician that his right shoulder contacted the center console. The driver sustained a sprained right shoulder due to loading the center console. He also sustained a contusion over the right clavicular area, probably due to contacting the floor-mounted transmission lever. When the vehicle's right side wheels contacted the curb, rolling the vehicle back onto its wheels, the driver was redirected to the left and remained restrained in the seat as the vehicle came to final rest.

CASE VEHICLE DRIVER INJURIES

The 2008 Ford's driver stayed at the crash scene to give police a statement. He called a neighbor who came to the scene and drove him to a hospital where he was treated in the emergency room and released for minor injuries. He missed two work days as a result of the crash. The table below shows the driver's injuries and injury sources.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source	Source Confidence	Source of Injury Data
1	Sprain right shoulder, not further specified	minor 751020.1,1	Interior, center console first row	Certain	Emergency room records
2	Contusion over right clavicular area	minor 790402.1,1	Floor-mounted transmission selector lever	Probable	Emergency room records
3	Abrasion {scrape}, 38.1 x 2.5 cm (15 x 1 in) left forearm, not further specified	minor 790202.1,2	Air bag, driver's side impact	Possible	Emergency room records
4	Contusion, 10.2 cm (4 in) diameter, left shoulder	minor 790402.1,2	Left front window sill	Probable	Interviewee (same person)
5	Injury {damage} to nerve left leg, not further specified	unknown 815099.7,0	Left front door panel, rear lower quadrant	Possible	Interviewee (same person)

The 2008 Ford's front passenger [28-year-old, male; 178 cm and 79 kg (70 in and 175 lbs] was seated in an upright posture with both feet on the floor. The seat track was adjusted 17 cm (6.7 in) rear of full-forward, which corresponded to between the middle and rear most position, and the seat back was slightly reclined. The adjustable head restraint was located in the full up-position, and the distance from the top of the seat back to the top of the head restraint was 33 cm (13 in).

The vehicle's left side impact with the 2003 Ford displaced the front passenger forward and to the left, opposite the 10 o'clock direction of force and he loaded the lap-and-shoulder belt. As the vehicle rotated CCW and rolled onto its right side, he was redirected to the right and the right side of his torso probably loaded through the deployed seat back-mounted side impact air bag to the right front door panel, rear upper quadrant. He sustained a contusion on his right side, right shoulder, and arm. He also sustained a contusion on the right elbow, probably from loading the right front door arm rest, and a cervical strain, probably due to impact forces. When the vehicle's right side wheels contacted the curb, rolling the vehicle back onto its wheels, the front passenger was redirected to the left and remained restrained in the seat as the vehicle came to final rest.

CASE VEHICLE FRONT ROW PASSENGER INJURIES

The 2008 Ford's front passenger sustained minor injuries and was transported by ambulance to an hospital where he was treated in the emergency room and released. He missed eight work days as a result of the crash. The table below shows the front passenger's injuries and injury sources.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source	Source Confidence	Source of Injury Data
1	Strain, acute, cervical with mild loss of normal cervical lordosis[3]	minor 640278.1,6	Noncontact injury: impact forces	Probable	Emergency room records
2	Contusion {bruising}, extensive, right side, not further specified	minor 490402.1,1	Right front door panel, rear upper quadrant	Probable	Interviewee (same person)
3	Contusion {bruising}, extensive, right shoulder and arm, not further specified	minor 790402.1,1	Right front door panel, rear upper quadrant	Probable	Interviewee (same person)
4	Contusion right elbow, not further specified	minor 790402.1,1	Right front hardware/armrest, rear upper quadrant	Probable	Emergency room records

[3] The following term is defined in DORLAND'S ILLUSTRATED MEDICAL DICTIONARY as follows:
lordosis (lor-do/sis): 1. the anterior concavity in the curvature of the lumbar and cervical spine as viewed from the side.

The 2003 Ford Escape Limited was a 4-wheel drive, 4-door, sport utility vehicle (VIN: 1FMCU94163K------) equipped with a 3.0-liter, V6 engine, automatic transmission, and 4-four wheel anti-lock disc brakes.

Exterior Damage: The 2003 Ford's impact with the 2008 Ford involved the entire front plane. The direct damage involved the front bumper, grille, hood, and the left headlamp/turn lamp assembly. The direct damage began at the right front bumper corner and extended 156 cm (61.4 in) across the bumper. The maximum residual crush was 18 cm (7.1 in) occurring at C_1. The left and right side wheelbase were reduced 1 cm (0.4 in) and the induced damage involved the hood and left fender. The table below shows the vehicle's front crush profile.

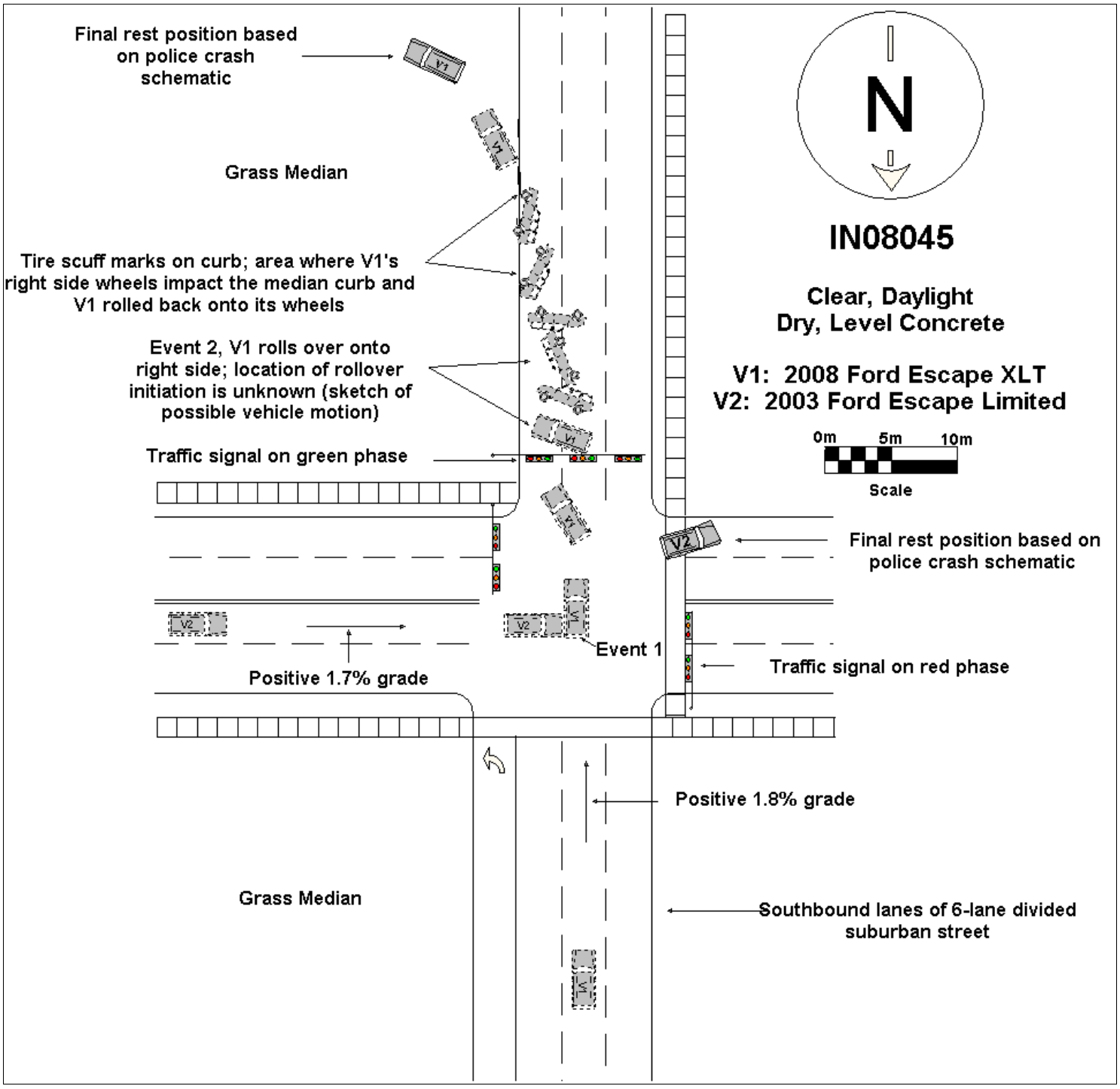
Units	Event	Direct Damage		Field L	C_1	C_2	C_3	C_4	C_5	C_6	Direct	Field L
		Width CDC	Max Crush								±D	±D
cm	1	156	18	156	18	4	4	3	1	0	0	0
in		61.4	7.1	61.4	7.1	1.6	1.6	1.2	0.4	0.0	0.0	0.0

The 2003 Ford's CDC for the front impact with the left side plane of the 2008 Ford was **01-FDEW-01** (**30** degrees). The Damage algorithm of the WinSMASH program calculated the vehicle's total Delta V as 11 km/h (6.8 mph). The longitudinal and lateral velocity changes were -10 km/h (-6.2 mph) and -6 km/h (-3.7 mph), respectively. The results of the WinSMASH program appeared reasonable.

The vehicle manufacturer's recommended tire size was P235/70R16. The Ford was equipped with tires of the recommended size. The vehicle's tire data are shown in the table below.

Tire	*Measured Pressure*		*Vehicle Manufacturer's Recommended Cold Tire Pressure*		*Tread Depth*		*Damage*	*Restricted*	*Deflated*
	kPa	psi	kPa	psi	milli-meters	32nd of an inch			
LF	331	48	207	30	7	9	None	No	No
LR	303	44	207	30	9	11	None	No	No
RR	317	46	207	30	10	12	None	No	No
RF	276	40	207	30	9	11	None	No	No

Other Vehicle's Driver: The police crash report indicated that the Buick's driver [19-year-old, female] was restrained by the lap-and-shoulder belt and the driver's air bag deployed. The driver sustained a police reported C injury and was transported by private conveyance from the scene to a medical facility.


Final rest position based on police crash schematic
V1
Grass Median
Tire scuff marks on curb; area where V1's right side wheels impact the median curb and V1 rolled back onto its wheels
Event 2, V1 rolls over onto right side; location of rollover initiation is unknown (sketch of possible vehicle motion)
Traffic signal on green phase
N
IN08045
Clear, Daylight
Dry, Level Concrete
V1: 2008 Ford Escape XLT
V2: 2003 Ford Escape Limited
0m 5m 10m
Scale
V2
Final rest position based on police crash schematic
Event 1
Positive 1.7% grade
Traffic signal on red phase
Positive 1.8% grade
Grass Median
Southbound lanes of 6-lane divided suburban street