INDIANA UNIVERSITY
TRANSPORTATION RESEARCH CENTER
School of Public and Environmental Affairs
222 West Second Street
Bloomington, Indiana 47403-1501
(812) 855-3908 Fax: (812) 855-3537

ON-SITE CERTIFIED ADVANCED 208-COMPLIANT VEHICLE INVESTIGATION

CASE NUMBER - IN-05-017
LOCATION - TEXAS
VEHICLE - 2005 DODGE MAGNUM
CRASH DATE - April 2005

Submitted:

April 19, 2006
Revised: April 10, 2008

Contract Number: DTNH22-01-C-07002

Prepared for:

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

DISCLAIMERS

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no responsibility for the contents or use thereof.

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.

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

1. *Report No.* IN-05-017	2. *Government Accession No.*	3. *Recipient's Catalog No.*	
4. *Title and Subtitle* On-Site Certified Advanced 208-Compliant Vehicle Investigation Vehicle - 2005 Dodge Magnum Location - Texas		5. *Report Date:* April 19, 2006 6. *Performing Organization Code*	
7. *Author(s)* Special Crash Investigations Team #2		8. *Performing Organization Report No.*	
9. *Performing Organization Name and Address* Transportation Research Center Indiana University 222 West Second Street Bloomington, Indiana 47403-1501		10. *Work Unit No. (TRAIS)* 11. *Contract or Grant No.* DTNH22-01-C-07002	
12. *Sponsoring Agency Name and Address* U.S. Department of Transportation (NPO-122) National Highway Traffic Safety Administration National Center for Statistics and Analysis Washington, D.C. 20590-0003		13. *Type of Report and Period Covered* Technical Report Crash Date: April 2005 14. *Sponsoring Agency Code*	
15. *Supplementary Notes* On-site air bag investigation involving a 2005 Dodge Magnum with manual safety belts and dual front manufacturer certified advanced 208-compliant air bag system.			
16. *Abstract* This report covers an on-site investigation of an air bag deployment crash that involved a 2005 Dodge Magnum (case vehicle) and a 2003 Lexus RX300 (other vehicle), which collided in a four leg intersection of two city streets. This crash is of special interest because the supplemental restraint (air bag) system in the Dodge Magnum is certified by the manufacturer to be compliant to the Advanced Air Bag portion of the Federal Motor Vehicle Standard (FMVSS) No. 208, and the case vehicle's driver [22-year-old, Black (unknown if Hispanic) male] sustained a police reported “C” (possible) injury. The case vehicle was traveling southwest in the outside through lane of a five lane, undivided city street. The Lexus was traveling southeast in the center lane of a six lane divided city street. It is unknown if the case vehicle’s driver made any avoidance maneuvers prior to the crash. Both vehicles entered the intersection, and the front of the case vehicle impacted the left center of the Lexus. The impact caused the case vehicle's driver air bag to deploy. Following the impact the Lexus rotated counterclockwise and rolled over, passenger side leading, three quarter rools. During the rollover, the Lexus departed the southeast edge of the southwest leg of the intersection where the hood impacted a fire hydrant and the right quarter panel impacted a utility pole guy-wire. As a result of the impact, the case vehicle deflected to the left, continued forward and rotated counterclockwise and most likely came to final rest within the mouth of the southwest leg of the intersection. The Lexus came to rest on its left side in the grass on the southeast corner of the intersection. The case vehicle’s driver seat was adjusted to its full rear position and the seat back was slightly reclined. The case vehicle’s driver was restrained by his manual, three-point, lap-and-shoulder safety belt. He loaded his safety belt and his face and chest impacted the deployed air bag. He rode down the air bag and bent the top half of the steering wheel forward, but sustained only a police-reported “C” (possible) injury and refused transport to a medical facility.			
17. *Key Words* Advanced Air Bag Deployment Motor Vehicle Traffic Crash Injury Severity		18. *Distribution Statement* General Public	
19 *Security Classif. (of this report)* Unclassified	20. *Security Classif. (of this page)* Unclassified	21. *No. of Pages* 12	22. *Price*

Form DOT 1700.7 (8-72) Reproduction of completed page authorized

TABLE OF CONTENTS

Page No.

BACKGROUND 1

SUMMARY 1

CRASH CIRCUMSTANCES 2

CASE VEHICLE: 2005 DODGE MAGNUM 4
- CASE VEHICLE DAMAGE 5
- AUTOMATIC RESTRAINT SYSTEM 7
- CASE VEHICLE DRIVER KINEMATICS 8
- CASE VEHICLE DRIVER INJURIES 8

OTHER VEHICLE: 2003 LEXUS RX300 9

CRASH DIAGRAM 12

BACKGROUND

IN-05-017

This investigation was brought to NHTSA's attention on or before April 28, 2005 by NASS CDS/GES sampling activities. This crash involved a 2005 Dodge Magnum SXT (case vehicle) and a 2003 Lexus RX300 (other vehicle). The crash occurred in April, 2005 at 10:04 a.m., in Texas and was investigated by the applicable city police department. This crash is of special interest because the supplemental restraint (air bag) system in the Dodge Magnum is certified by the manufacturer to be compliant to the Advanced Air Bag portion of the Federal Motor Vehicle Standard (FMVSS) No. 208, and the case vehicle's driver [22-year-old, Black (unknown if Hispanic) male] sustained a police reported "C" (possible) injury. This contractor inspected the scene and vehicles on 10-11 May, 2005. The case vehicle's driver was not interviewed. He could not be located. This report is based on the police crash report, scene and vehicle inspections, occupant kinematic principles, and this contractor's evaluation of the evidence.

SUMMARY

The case vehicle was traveling southwest in the outside through lane of a five lane, undivided city street approaching a four leg intersection. The Lexus was traveling southeast in the center lane of a six lane, divided city street also approaching the intersection. It is unknown if the case vehicle's driver made any avoidance maneuvers prior to the crash. Both vehicles entered the intersection, and the front of the case vehicle impacted the left center of the Lexus. The impact caused the case vehicle's driver air bag to deploy. Following the impact the Lexus rotated counterclockwise and rolled over, passenger side leading, three quarter rolls. During the rollover, the Lexus departed the southeast edge of the southwest leg of the intersection where the hood impacted a fire hydrant and the right quarter panel impacted a utility pole guy-wire. As a result of the impact, the case vehicle deflected to the left, continued forward and rotated counterclockwise and most likely came to final rest within the mouth of the southwest leg of the intersection. The Lexus came to rest on its left side in the grass on the southeast corner of the intersection. At the time of the crash the light condition was daylight, the atmospheric condition was clear, and the roadway pavement was dry bituminous.

The case vehicle's CDC was determined to be **01-FDEW-2** (**30** degrees). The WinSMASH reconstruction program, damage only algorithm calculated the case vehicle's Total, Longitudinal, and Lateral Delta Vs respectively as: 22 km.p.h. (13.7 m.p.h.), -19.1 km.p.h. (-11.9 m.p.h.), and -11 km.p.h. (-6.8 m.p.h.). The collision fit the WinSMASH reconstruction model, but based on the damage to both vehicles, the results appeared to be low. The case vehicle was towed due to damage.

The CDCs for the Lexus were determined to be: **10-LPEW-2** (**300** degrees) for the impact with the case vehicle, **00-TZDO-2** for the rollover, **00-TFLW-6** for the fire hydrant impact to the hood during the rollover and **00-RBMN-1** for the guy wire impact that also occurred during the rollover. The WinSMASH reconstruction program, damage only algorithm calculated the Lexus' Total, Longitudinal, and Lateral Delta Vs respectively as: 22 km.p.h. (13.7 m.p.h.), -11.0 km.p.h. (-6.8 m.p.h.), and 19.1 km.p.h. (11.9 m.p.h.). The collision fits the WinSMASH reconstruction model, but based on the damage to both vehicles, the results appeared to be low. The Lexus was towed due to damage.

Immediately prior to the crash the case vehicle's driver (22-year-old, male) was most likely seated in a nominal upright driving posture; however the position of his feet and hands is not known. His seat track was found adjusted to its rear-most position during the vehicle inspection, and his seat back was found slightly reclined. The driver was restrained by his manual, three-point, lap-and-shoulder safety belt system.

The case vehicle's impact with the Lexus locked the driver's safety belt retractor and caused the driver to continue forward and to the right along a path opposite the case vehicle's 30 degree direction of principal force as the case vehicle decelerated longitudinally and accelerated laterally to the left. The driver loaded his safety belt and his face and chest loaded his deployed air bag. His right leg may have impacted the center console loosening the molding. The driver rode down the air bag loading the top half of the steering wheel and bending it forward. As the case vehicle rotated counterclockwise the driver moved to the right within his seat and remained in his seat as the case vehicle came to final rest. The driver remained in his seat following the impact and most likely exited the case vehicle under his own power. The police crash report indicated the driver sustained a "C" (possible) injury and refused transport to a medical facility The case vehicle driver's use of his three-point, lap-and-shoulder belt and the deployment of his air bag mitigated his interaction with the case vehicle's interior frontal components and reduced his potential for injury in this crash.

CRASH CIRCUMSTANCES

Crash Environment: The trafficway on which the case vehicle was traveling was a five-lane, undivided, city street, traversing in an northeasterly and southwesterly direction. The case vehicle was approaching a four-leg intersection. The trafficway on which the Lexus was traveling was a six lane, divided, city street, traversing in a northwesterly and southeasterly direction. The Lexus was also approaching the four-leg intersection. On the northeastern leg of the intersection, the southwest bound roadway (i.e., case vehicle's approach roadway) had three through lanes while the northeast bound roadway had two through lanes. The average lane widths were approximately 2.7 meters (8.9 feet). On the northwestern leg of the intersection, the southeast bound roadway (i.e., Lexus' approach roadway) had one through lane, one through/left turn lane and a left turn lane while the northwest bound roadway had three through lanes. In addition, the roadway was divided by a raised, curbed median. The average lane widths were approximately 3.1 meters (10.2 feet), and the median width was 1.8 meters (5.9 feet). Roadway pavement markings consisted of broken white lane lines, solid white turn lane edge lines with "Bots Dots", double yellow center lines, solid white designated pedestrian crossings and turn/through lane arrows. Each roadway was also bordered by barrier curbs. The speed limit for both trafficways was 56 km.p.h. (35 m.p.h.). At the time of the crash the light condition was daylight, the atmospheric condition was clear, and the roadway pavement was dry bituminous with an estimated coefficient of friction of 0.72. The roadway grade on the case vehicle's approach was 1.1% negative. The roadway grade on the Lexus' approach roadway was 0.9% negative. Traffic density was unknown, but given the location and time of the crash, traffic density was most likely moderate to heavy. The site of the crash was a combination of urban residential, commercial and school zone. See the Crash Diagram at the end of this report.

Pre-Crash: The case vehicle was traveling southwest in the outside through lane (**Figure 1**), and the driver intended to continue straight ahead through the intersection. The Lexus was traveling southeast in the center lane (**Figure 2**), and the driver intended to continue straight ahead through the intersection. It is unknown if the case vehicle's driver made any avoidance maneuvers prior to the crash. The crash occurred in the four-leg intersection of the two trafficways (**Figure 3**).

Figure 1: Approach of case vehicle southwest bound in outside lane

Figure 2: Approach of Lexus southeast bound to intersection in the center lane

Figure 3: View from case vehicle's approach to area of impact (arrow) in the intersection

Figure 4: Damage to front of case vehicle due to impact with the Lexus, front bumper fascia is missing

Crash: The front of the case vehicle (**Figure 4**) impacted the left center of the Lexus (**Figure 5** below), causing the case vehicle's driver air bag to deploy. It is unknown whether more than one stage of the multi-stage air bag activated. The case vehicle's front right passenger air bag did not deploy because there was no front right passenger in the vehicle. Following the impact the Lexus rotated counterclockwise and rolled over, passenger side leading, three quarter turns (**Figure 6** below). During the rollover, the Lexus departed the southeast edge of the southwest leg of the intersection where the hood impacted a fire hydrant and the right quarter panel impacted a utility pole guy-wire.

Post-Crash: As a result of the impact, the case vehicle deflected to the left, continued forward and rotated counterclockwise. The final rest position of the case vehicle was not depicted on the

police crash schematic, and no evidence of the final rest position was observed during this contractor's scene inspection. However, based on the post-impact trajectory of the Lexus, the case vehicle most likely came to rest near or within the mouth of the southwest leg of the intersection (**Figure 6**). The Lexus came to rest on its left side in the grass on the southeast corner of the intersection (**Figure 7**).

Figure 5: Damage to left side of Lexus due to impact with the case vehicle

Figure 6: View south to post impact trajectory and rollover path of Lexus, arrows show Lexus' rim gouges, final rest of case vehicle was probably in mouth of this leg of the intersection

Figure 7: View back to area of impact through final rest of Lexus, Jeep in intersection is in approximate area of the Lexus at impact

CASE VEHICLE

The 2005 Dodge Magnum SXT was a rear wheel drive, four-door station wagon (VIN: 2D8FV48V55H------) equipped with a 3.5 L, V6 gas engine; power assisted, four wheel anti-lock disc brakes; traction control with electronic stability program and a manual tilt and telescoping steering wheel. The front seating row was equipped with driver and front right bucket seats with adjustable head restraints and seat track position sensors; driver and front right passenger manual, three-point, lap-and-shoulder safety belt systems with constant force retractors and multi-stage driver air bag, and a multi-stage front right passenger air bag with an occupant classification system in the front right seat. The back seat was equipped with a bench seat with three-point, lap-and-shoulder safety belt systems in all three seat positions and a LATCH system for securing child safety seats. Front and rear side curtain air bags were an option, but the case vehicle was not so equipped.

The various sensors in the case vehicle's advanced occupant restraint system analyze a combination of factors including the driver and front right seat track position and the predicted crash severity to determine the front air bag inflation level appropriate for the severity of the crash. For the front right seat position, an occupant weight sensor in the seat cushion determines if an occupant is on the seat and enables or suppresses deployment of the air bag based on the amount of weight on the seat.

Exterior Damage: The case vehicle's impact with the Lexus directly damaged the front bumper, grille, hood and both headlamp/turn signal assemblies (**Figures 8** and **9**). The direct damage began at the front right bumper corner and extended 150 centimeters (59.1 inches) across the front end. The residual maximum crush was measured as 38 centimeters (15 inches) occurring 12 centimeters (4.7 inches) right of C_3 (**Figure 10**). The table below shows the case vehicle's 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	150	38	134	37	25	32	32	24	22	0	0
in		59.1	15.0	52.8	14.6	9.8	12.6	12.6	9.4	8.7	0.0	0.0

Figure 8: Overview of damage to front of case vehicle due to impact with the Lexus

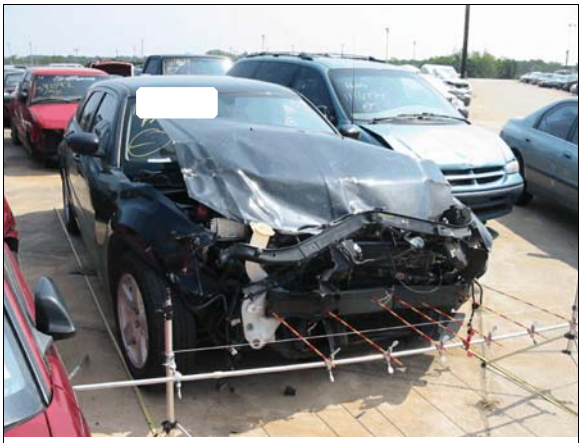


Figure 9: Overview of damage to the front of the case vehicle due to impact by with the Lexus

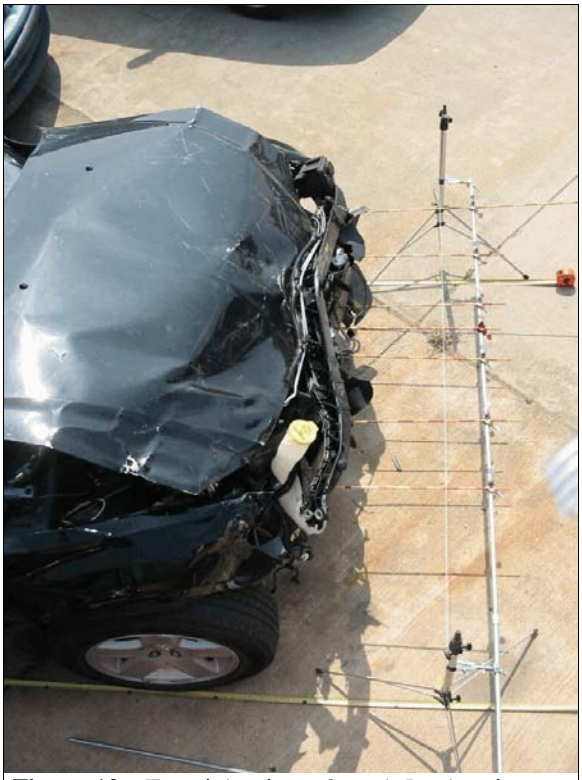


Figure 10: Top right view of crush [each stripe on rods is 5 cm (2 in)] to front of case vehicle

The impact reduced the case vehicle's left side wheelbase 8 centimeters (3.1 inches). The right side wheelbase was unaltered by the crash. Induced damage involved the hood, both fenders and the front of the left rocker panel.

The case vehicle's recommended tire size was: P215/65R17, and the vehicle was equipped with tires of this size. The case vehicle's tire data are shown in the table below.

Tire	*Measured Pressure*		*Recommend Pressure*		*Tread Depth*		*Damage*	*Restricted*	*Deflated*
	kpa	psi	kpa	psi	milli-meters	32nd of an inch			
LF	200	29	207	30	7	9	None	No	No
RF	193	28	207	30	6	8	None	No	No
LR	193	28	207	30	6	8	None	No	No
RR	207	30	207	30	6	8	None	No	No

Vehicle Interior: Inspection of the case vehicle's interior (**Figures 11** and **12**) revealed occupant contact evidence on the console. No other occupant contact evidence was found and no intrusion of the passenger compartment was observed. Finally, there did not appear to be compression of the energy absorbing steering column; however, the top of the steering wheel rim was deformed (**Figure 13** below) due to driver loading through the air bag.

Figure 11: Overview of case vehicle's steering wheel, instrument panel and windshield, arrow shows location of front right passenger air bag

Figure 12: Overview of steering wheel, instrument panel and windshield

Damage Classification: Based on the vehicle inspection, the case vehicle's CDC was determined to be **01-FDEW-2** (**30** degrees). The WinSMASH reconstruction program, damage only algorithm was used to reconstruct the case vehicle's Delta V. The Total, Longitudinal, and Lateral Delta Vs are, respectively: 22 km.p.h. (13.7 m.p.h.), -19.1 km.p.h. (-11.9 m.p.h.), and -11 km.p.h. (-6.8 m.p.h.). The collision fit the WinSMASH reconstruction model, but based on the damage

to both vehicles, the results appear to be low. The case vehicle was towed due to damage.

Figure 13: Left side view of deformation to steering wheel rim

AUTOMATIC RESTRAINT SYSTEM

The case vehicle's driver air bag was located in the steering wheel hub. An inspection of the air bag module cover flaps and the air bag fabric revealed that the cover flaps opened at the designated tear points (**Figure 14**). There was no evidence of damage during the deployment to the air bag module cover flaps or the air bag fabric. Both module cover flaps were semi-circular in shape. The Chrysler "Ram" emblem was located in the bottom center of the top flap. There was a small pointed section of the emblem protruding from the bottom of the flap that fit into a recessed contour at the top center of the bottom flap. The top flap was 15 centimeters (5.9 inches) in width and 8.5 centimeters (3.3 inches) in height at the center. The bottom flap was 15 centimeters (5.9 inches) in width and 6 centimeters (2.4 inches) in height at the center. The deployed driver's air bag (**Figure 15**) was round with a diameter of approximately 60 centimeters (23.6 inches). The air bag was designed with two tethers, each approximately 5 centimeters (2 inches) in width and had two vent ports (**Figure 16** below), each approximately 4 centimeters (1.6 inches) in diameter, located at the 11 and 1 o'clock positions. The distance between the mid-center of the driver's seat back, as positioned at the time of the vehicle inspection (i.e., seat track at full rear position, seat back slightly reclined), and the air bag's fabric at approximate full excursion was 38 centimeters (15 inches). Lastly, no occupant contact marks were observed on the air bag.

Figure 14: Case vehicle's driver air bag module cover flaps

Figure 15: Case vehicle's deployed driver's air bag

The front right passenger's air bag was located in the middle of the instrument panel (**Figure 11** above). The deployment of the front right air bag was suppressed by the case vehicle's advanced occupant protection system because there was no front right passenger in the case vehicle at the time of the crash.

Immediately prior to the crash the case vehicle's driver [22-year-old, Black (unknown if Hispanic) male; unknown height and weight] was most likely seated in a nominal upright driving posture; however the position of his feet and hands is not known. His seat track was found adjusted to its rear-most position during the vehicle inspection and the his seat back was found slightly reclined.

Figure 16: Case vehicle driver's air bag vent ports

The case vehicle's driver was restrained by his manual, three-point, lap-and-shoulder safety belt system. The shoulder belt had abrasion's on a length of the belt (**Figure 17**) due to loading the D-ring consistent with activation of the constant force retractor, which gradually releases the safety belt during the crash to control the belt forces on the occupant. In addition, there were corresponding abrasions in the plastic D-ring (**Figure 18** below).

Figure 17: Load marks on case vehicle driver's shoulder belt

The case vehicle's impact with the Lexus locked the driver's safety belt retractor and caused the driver to continue forward and to the right along a path opposite the case vehicle's 30 degree direction of principal force as the case vehicle decelerated longitudinally and accelerated laterally to the left. The driver loaded his safety belt and his face and chest loaded his deployed air bag. His right leg may have impacted the center console loosening the molding. The driver rode down the air bag and bent the top half of the steering wheel forward (**Figure 13** above). As the case vehicle rotated counterclockwise the driver moved to the right within his seat and remained in his seat as the case vehicle came to final rest. The driver remained in his seat following the impact and most likely exited the case vehicle under his own power.

CASE VEHICLE DRIVER INJURIES

The police crash report indicated the driver sustained a "C" (possible) injury and refused transport to a medical facility. It is not known if the driver subsequently sought medical attention or lost any work days as a result of the crash.

The 2003 Lexus RX300 was a front wheel drive, four-door sport utility vehicle (VIN: JTJGF10U630------). The Lexus was equipped with four wheel anti-lock brakes, front bucket seats with adjustable head restraints and driver and front right passenger, three point, lap-and-shoulder safety belt systems and advanced driver and front right passenger air bags, which did not deploy as a result of the crash.

Figure 18: Load marks in case vehicle driver's safety belt D-ring

Exterior Damage: The Lexus' impact with the case vehicle involved the left side doors (**Figure 19**). Direct damage began 76 centimeters (29.9 inches) forward of the left rear axle and extended 139 centimeters (54.7 inches) along the left side of the Lexus. Crush measurements were taken at the mid door level. The maximum residual crush was measured as 16 centimeters (6.3 inches) occurring at C_4 (**Figure 20**). The direct damage from the rollover involved the right side, left side and roof (**Figure 21** below) of the Lexus. The impact with the fire hydrant that occurred during the rollover involved the hood and windshield (**Figure 22** below). The guy wire impact that occurred during the rollover appeared to have involved a narrow area of the right quarter panel. The table below shows the Lexus' crush profile for the side impact.

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	139	16	183	0	11	15	16	14	13	14	7
in		54.7	6.3	72.0	0.0	4.3	5.9	6.3	5.5	5.1	5.5	2.8

Figure 19: Damage to left side of Lexus due to impact with case vehicle and the rollover

Figure 20: Top view of crush to left side of Lexus due to impact with case vehicle

Figure 21: Overview of damage to the roof and right side of the case vehicle due to the rollover

Figure 22: Damage to Lexus' hood and windshield due to fire hydrant impact during the rollover

The Lexus' left side wheelbase was reduced 1 centimeter (0.4 inch). The right side wheelbase was extended 3 centimeters (1.2 inches). Induced damage involved both sides, the roof and the hood of the Lexus'.

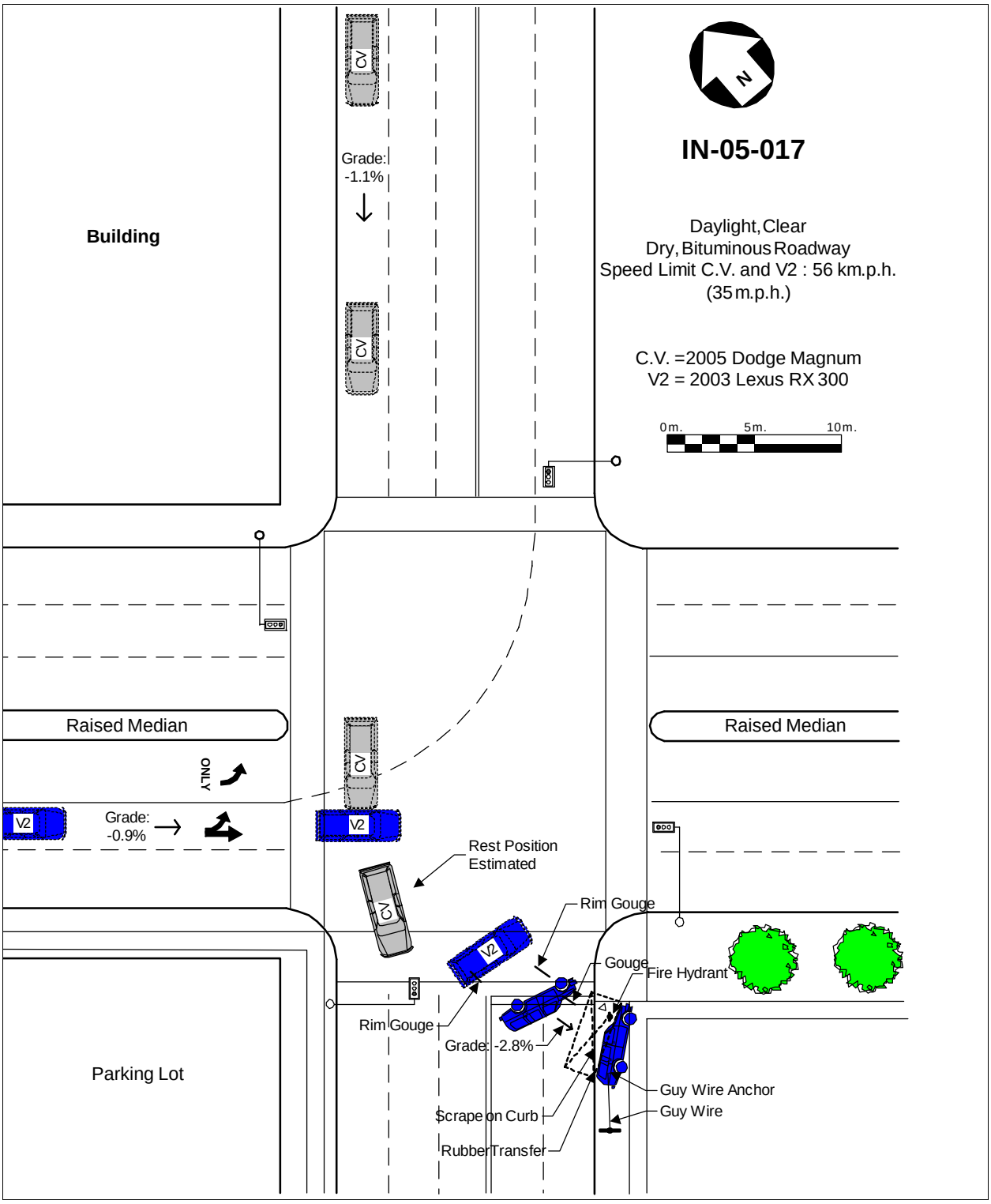
The Lexus' recommended tire size was: P225/70R16, and the vehicle was equipped with tires of this size. The Lexus' tire data are shown in the table below.

Tire	*Measured Pressure*		*Recommend Pressure*		*Tread Depth*		*Damage*	*Restricted*	*Deflated*
	kpa	psi	kpa	psi	milli-meters	32nd of an inch			
LF	Flat	Flat	Unk	Unk	6	8	None	No	Yes
RF	138	20	Unk	Unk	6	8	None	No	No
LR	186	27	Unk	Unk	7	9	None	No	No
RR	186	27	Unk	Unk	7	9	None	No	No

Damage Classification: Based on the vehicle inspection, the CDCs for the Lexus were determined to be: **10-LPEW-2** (**300** degrees) for the impact with the case vehicle, **00-TZDO-2** for the rollover, **00-TFLW-6** for the fire hydrant impact to the hood during the rollover and **00-RBMN-1** for the guy wire impact that also occurred during the rollover. The WinSMASH reconstruction program, damage only algorithm was used to reconstruct the Lexus' Delta V for the impact with the case vehicle. The Total, Longitudinal, and Lateral Delta Vs are, respectively: 22 km.p.h. (13.7 m.p.h.), -11.0 km.p.h. (-6.8 m.p.h.), and 19.1 km.p.h. (11.9 m.p.h.). The collision fits the WinSMASH reconstruction model, but based on the damage to both vehicles, the results appear to be low. The Lexus was towed due to damage.

Lexus' Occupants: According to the police crash report, the driver of the Lexus [34-year-old, White (unknown if Hispanic) female] was restrained by her manual, three-point, lap-and-shoulder,

safety belt system. The police crash report indicated the driver sustained a “C” (possible) injury and refused transport to a treatment facility.


IN-05-017
Daylight, Clear
Dry, Bituminous Roadway
Speed Limit C.V. and V2 : 56 km.p.h.
(35 m.p.h.)
C.V. =2005 Dodge Magnum
V2 = 2003 Lexus RX 300
0m. 5m. 10m.
N
Building
Grade: -1.1%
Raised Median
Raised Median
ONLY
Grade: -0.9%
Rest Position Estimated
Rim Gouge
Gouge
Fire Hydrant
Rim Gouge
Grade: -2.8%
Parking Lot
Guy Wire Anchor
Guy Wire
Scrape on Curb
Rubber Transfer
CV
V2