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ON-SITE SIDE IMPACT INFLATABLE OCCUPANT PROTECTION INVESTIGATION

CASE NUMBER - IN-06-002
LOCATION - WISCONSIN
VEHICLE - 2005 ACURA MDX
CRASH DATE - December 2005

Submitted:

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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 report covers an on-site investigation of an air bag deployment crash that involved a 2005 Acura MDX (case vehicle), a 2002 Jeep Liberty (1st other vehicle) and a 2004 Hyundai Elantra GT (2nd other vehicle). This crash is of special interest because the case vehicle was equipped with side curtain air bags and front seat back-mounted side impact air bags. The case vehicle was also equipped with multiple Advanced Occupant Protection System (AOPS) features including manufacturer certified advanced 208 compliant front air bags, an Event Data Recorder (EDR), and the case vehicle's driver [64-year-old, White (non-Hispanic) female] sustained a police reported "C" (possible) injury as a result of the crash. The case vehicle was northbound in the northbound through lane of a two-lane city street and was entering a four leg intersection. The Jeep was eastbound in the inside through lane and entered the intersection. The Hyundai was westbound stopped at the traffic signal in the right turn lane. The front of the Jeep impacted the case vehicle's left fender and left front door causing the case vehicle driver's seat back-mounted side impact air bag and side curtain air bag to deploy and the driver's safety belt pretensioner to actuate. The case vehicle then rotated counterclockwise and traveled northeast across the intersection, and the right rear corner of the case vehicle sustained a minor impact with the left front corner of the Hyundai. Following the impact with the Hyundai, the case vehicle departed the northeast corner of the intersection and came to final rest with the front portion of the vehicle off the roadway heading northeast. The Hyundai remained in the east leg of the intersection and came to final rest heading west. The impact with the case vehicle caused the Jeep to rotate counterclockwise. It traveled northeast across the intersection and came to final rest on the northeast corner of the intersection heading northeast. The case vehicle's restrained driver sustained only minor injury.			
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TABLE OF CONTENTS IN-06-002

Page No.

BACKGROUND 1

SUMMARY 1

CRASH CIRCUMSTANCES 2

CASE VEHICLE: 2005 ACURA MDX 4
- CASE VEHICLE DAMAGE 4
- AUTOMATIC RESTRAINT SYSTEM 6
- CRASH DATA RECORDING 7
- CASE VEHICLE DRIVER KINEMATICS 7
- CASE VEHICLE DRIVER INJURIES 8

1ST OTHER VEHICLE: 2002 JEEP LIBERTY 9

2ND OTHER VEHICLE: 2004 HYUNDAI ELANTRA GT 10

CRASH DIAGRAM 11

BACKGROUND

IN-06-002

This investigation was brought to NHTSA's attention on or before January 20, 2006 through GES sampling activities. This crash involved a 2005 Acura MDX (case vehicle), a 2002 Jeep Liberty (1st other vehicle) and a 2004 Hyundai Elantra GT (2nd other vehicle). The crash occurred in December 2005, at 11:44 a.m., in Wisconsin and was investigated by the applicable city police department. This crash is of special interest because the case vehicle was equipped with side curtain air bags and front seat back-mounted side impact air bags. The case vehicle was also equipped with multiple Advanced Occupant Protection System (AOPS) features including manufacturer certified advanced 208 compliant front air bags, an Event Data Recorder (EDR), and the case vehicle's driver [64-year-old, White (non-Hispanic) female] sustained a police reported "C" (possible) injury as a result of the crash. This contractor inspected the case vehicle, harvested the Restraint Control Module (RCM), which contains the EDR, and interviewed the case vehicle's driver on January 31, 2006. The crash scene and the Jeep Liberty were inspected on February 1, 2006. This report is based on the police crash report, scene and case vehicle inspections, an interview with the case vehicle's driver, case vehicle driver's medical records, occupant kinematic principles, and this contractor's evaluation of the evidence.

SUMMARY

The case vehicle was northbound in the northbound through lane of a two-lane city street and was entering a four leg intersection. The Jeep was eastbound in the inside through lane and entered the intersection. The Hyundai was westbound stopped at the traffic signal in the right turn lane. The case vehicle's driver stated she did not see the Jeep approaching and took no actions to avoid the crash. The front of the Jeep impacted the case vehicle's left fender and left front door causing the case vehicle driver's seat back-mounted side impact air bag and side curtain air bag to deploy and the driver's safety belt pretensioner to actuate. The case vehicle's front air bag did not deploy. The case vehicle's crash sensing algorithm most likely determined that the crash was not severe enough to require deployment of the driver's front air bag. The case vehicle then rotated counterclockwise, and the right rear corner of the case vehicle sustained a minor impact with the left front corner of the Hyundai. Following the impact with the Hyundai, the case vehicle departed the northeast corner of the intersection and came to final rest with the front portion of the vehicle off the roadway heading northeast. The Hyundai remained in the east leg of the intersection and came to final rest heading west. The impact with the case vehicle caused the Jeep to rotate counterclockwise. It traveled northeast across the intersection and came to final rest on the northeast corner of the intersection heading northeast.

The CDCs for the case vehicle were determined to be: **10-LYEW-3** (**290** degrees) for the left side impact with the Jeep and: **02-RBLN-1 (60** degrees) for the right rear impact with the left front of the Hyundai. The maximum residual crush for the left side impact was measured as 31 centimeters (12.2 inches) occurring 19 centimeters (7.5 inches) forward C_3. There was no residual crush as a result of the right rear impact. The WinSMASH reconstruction program, damage algorithm, calculated the case vehicle's Total, Longitudinal, and Lateral Delta Vs for the left side impact (i.e., highest severity impact) respectively as: 20.0 km.p.h. (14.4 m.p.h.), -6.8 km.p.h. (-4.2 m.p.h.), and 18.8 km.p.h. (11.7 m.p.h.). The case vehicle was towed due to damage.

The CDC for the Jeep's impact to the left side of the case vehicle was determined to be **01-FDEW-2**. (**20** degrees). The WinSMASH reconstruction program, damage algorithm, calculated the Jeep's Total, Longitudinal, and Lateral Delta Vs respectively as: 23.0 km.p.h. (14.3 m.p.h.), -21.6 km.p.h. (13.4 m.p.h.), and -7.9 km.p.h. (-4.9 m.p.h.). The Jeep was towed due to damage.

The case vehicle's driver was restrained by her manual, three-point, lap-and-shoulder, safety belt system. She sustained only minor injury as result of the crash. The driver's use of her safety belt system and the deployment of her side curtain air bag and seat back-mounted side impact air bag mitigated her interaction with the case vehicle's interior and reduced her injury potential.

CRASH CIRCUMSTANCES

Crash Environment: The trafficway on which the case vehicle was traveling was a two-lane, undivided, city street, traversing in a north and south direction approaching a four-leg intersection. The trafficway on which the Jeep and the Hyundai were traveling was a five-lane, divided, city street traversing in an east and west direction approaching the same intersection. The south leg of the intersection had one northbound and one southbound through lane. The northbound travel lane was 3.1 meters (10.2 feet) in length. The southbound travel lane was 3.7 meters (12.1 feet) in width. The north leg of the intersection had one southbound/left turn lane, a right turn lane and one northbound through lane. The northbound lane was 5.4 meters (17.7 feet) near the intersection. The southbound through lane was 3.3 meters (10.8 feet) in width while the other through lane/left turn lane was 3.5 meters (11.5 feet) in width. The east leg of the intersection had two westbound through lanes, a left turn lane and two eastbound through lanes. The outside westbound through lane was 4.1 meters in width. The inside westbound through lane was 3.3 meters (10.8 feet) in width. The westbound left turn lane was 3.1 (10.2 feet) meters in width. The inside eastbound through lane was 3.5 meters (11.5 feet) in width. The outside eastbound through lane was 5.2 meters (17.1 feet) in width and there was a 0.8 meter (2.6 feet) wide bicycle lane adjacent to the eastbound lanes. In addition, the east leg of the intersection was divided by a painted median 1 meter (3.3 feet) in width. The west leg of the intersection had two eastbound through lanes, a left turn lane and two westbound through lanes. The outside eastbound through lane was 4 meters (13.1 feet) in width. The inside eastbound through lane was 3.3 meters (10.8 feet) in width. The eastbound left turn lane was 4.4 meters (14.4 feet) in width. The inside westbound through lane was 3.4 meters (11.2 feet) in width. The outside westbound through lane was 4.2 meters (13.4 feet) in width. In addition, the west leg of the intersection was divided by a painted median 0.8 meter (2.6 feet) in width. The north, east and west legs of the intersection were bordered by barrier curbs, and the intersection was controlled by three-phase traffic signals. Pavement marking consisted of solid white turn lane lines, broken white through lane line, yellow median lines, double yellow center lines for northbound and southbound traffic, white stop bars and crosswalk lines and white turn lane directional arrows. The speed limit for all roadways 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, level bituminous with an estimated coefficient of friction of 0.72. Traffic density was heavy, and the site of the crash was urban commercial. See the Crash Diagram at the end of this report.

Pre-Crash: The case vehicle was northbound in the northbound through lane (**Figure 1**) and was entering the intersection. The case vehicle's driver was intending to continue northbound through the intersection. The Jeep was eastbound in the inside through lane (**Figure 2**), and the driver was intending to continue eastbound through the intersection. The Hyundai was westbound stopped at the traffic signal in the right turn lane (**Figure 2**), and the driver was intending to turn right. The case vehicle's driver stated she did not see the Jeep approaching and took no actions to avoid the crash. The crash occurred within the intersection.

Figure 1: Approach of case vehicle northbound to impact in intersection, arrow shows area of impact

Figure 2: Approach of Jeep to intersection, red arrow shows impact area, green arrow shows location of Hyundai, blue arrow shows final rest area of case vehicle, yellow arrow shows final rest area of Jeep

Figure 3: Left front corner view of damage to front of Jeep from impact with left side of case vehicle, increments on tape measure are 10ths of meter, each increment on rods is 5 cm (2 in)

Figure 4: Overview of damage to left side of case vehicle from impact with the Jeep

Crash: The front of the Jeep (**Figure 3**) impacted the case vehicle's left fender and left front door (**Figure 4**) causing the case vehicle driver's seat back-mounted side impact air bag and side curtain air bag to deploy and the driver's safety belt pretensioner to actuate. The case vehicle's front air bag did not deploy. The case vehicle's crash sensing algorithm most likely determined that the longitudinal deceleration was not severe enough to require deployment of the driver's front air bag. The case vehicle then rotated counterclockwise and traveled northeast across the intersection, and the right rear corner of the case vehicle sustained a minor impact with the left front corner of the Hyundai.

Post-Crash: Following the impact with the Hyundai, the case vehicle departed the northeast corner of the intersection and came to final rest with the front portion of the vehicle off the roadway heading northeast (**Figure 2** above). The Hyundai remained in the east leg of the intersection and came to final rest heading west. The impact with the case vehicle caused the Jeep to rotate counterclockwise. It traveled northeast across the intersection and came to final rest on the northeast corner of the intersection heading northeast (**Figure 2** above).

CASE VEHICLE

The 2005 Acura MDX was a four wheel drive, four-door sport utility vehicle (VIN: 2HNYD18865H------) equipped with a 3.5 L, V6 engine; five-speed automatic transmission; four wheel, anti-lock brakes; electronic traction control, stability control and tire inflation monitor. The case vehicle was also equipped with driver and front right passenger bucket seats with adjustable head restraints, seat position sensor; driver and front right passenger manual, three-point, lap-and-shoulder safety belts with adjustable upper anchors and pretensioners; dual stage driver and front right passenger air bags; front, second and third seat row side curtain air bags; driver and front right passenger seat-back mounted side-impact air bags and a front right passenger occupant detection and automatic air bag suppression system. In addition, the manufacturer of this vehicle has certified that it meets the advanced air bag requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 208.

The various sensors in the case vehicle's advanced occupant restraint system analyze a combination of factors including the predicted crash severity, seat track position and driver and front right passenger safety belt usage 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. In addition, sensors located in the lower "B" and "C" pillars detect the occurrence of a side impact and deploy the seat back-mounted side impact air bag and side curtain air bag on the impacted side of the vehicle.

CASE VEHICLE DAMAGE

Exterior Damage: The case vehicle's impact with the Jeep involved the left side of the case vehicle. The left fender, left front door, left rear door and sill were directly damaged and crushed inward. The direct damage began 45 centimeters (17.7 inches) forward of the left rear axle and extended 238 centimeters (93.7 inches) forward along the left side of the vehicle (**Figure 4** above). Crush measurements were taken at the mid-door level, and the maximum residual crush was measured as 31 centimeters (12.2 inches) occurring 19 centimeters (7.5 inches) forward C_3 (**Figure 5**). The case vehicle's right rear corner impact with the Hyundai involved a small portion or the right corner of the case vehicle's back bumper fascia.

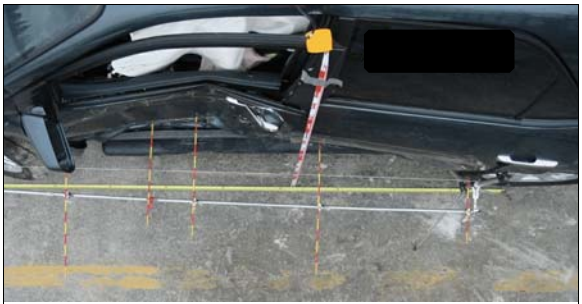


Figure 5: Top view of crush to left side of case vehicle

There was no residual crush from this impact. The table below shows the case vehicle's crush profile for the left 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	238	31	273	0	11	27	7	18	1	28	46
in		93.7	12.2	107.5	0.0	4.3	10.6	2.8	7.1	0.4	11.0	18.1

The case vehicle's left side wheelbase was extended 2.0 centimeters (0.8 inches) while the right side wheelbase was unchanged. Induced damage also involved the left fender, left front door, and left rear door as well as the left "A"-pillar, "B"-pillar and the left roof side rail. In addition, the windshield was cracked.

The recommended tire size was: P235/65R17, and the case 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	234	34	221	32	9	11	None	Yes	No
RF	241	35	221	32	9	11	None	No	No
LR	241	35	221	32	9	11	None	No	No
RR	241	35	221	32	9	11	None	No	No

Vehicle Interior: Inspection of the case vehicle's interior (**Figure 6**) revealed an occupant contact scuff on the driver's left knee bolster and load mark abrasions on the driver's safety belt. Two small black marks were observed near the top central portion of the driver's side curtain air bag. However, they did not appear to be related to driver contact. They appeared to be too high on the air bag to be associated with contact by the restrained, 155 centimeters (61 inches) tall driver. No other occupant contact evidence was found.

Figure 6: Overview of instrument panel, windshield, and steering wheel

The case vehicle sustained five intrusions due to the impact with the Jeep. The two most

severe intrusions into the driver's occupant space were: 15 centimeters (5.9 inches) of lateral "B"-pillar intrusion and 14 centimeters (5.5 inches) of lateral door panel intrusion. Finally, there was no evidence of compression of the energy absorbing steering column, and no deformation of the steering wheel rim was observed (**Figure 7**).

Figure 7: Right side view of case vehicle's steering wheel and steering column showing lack of deformation

Damage Classification: Based on the vehicle inspection, the CDCs for the case vehicle were determined to be: **10-LYEW-3** (**290** degrees) for the left side impact with the Jeep and: **02-RBLN-1** (**60** degrees) for the right rear impact with the left front of the Hyundai. The WinSMASH reconstruction program, damage algorithm, was used on to reconstruct the case vehicle's Delta V. The preliminary Total, Longitudinal, and Lateral Delta Vs are, respectively: 20.0 km.p.h. (14.4 m.p.h.), -6.8 km.p.h. (-4.2 m.p.h.), and 18.8 km.p.h. (11.7 m.p.h.). The case vehicle was towed due to damage.

AUTOMATIC RESTRAINT SYSTEM

The case vehicle's side curtain air bags were located along the roof side rail (**Figure 8**) and consisted of one continuous air bag that extended the length of the passenger compartment to provide protection to the outboard occupants in all three seat rows. The left side curtain air bag deployed as a result of the impact with the Jeep. There was no evidence of damage to the air bag due to the deployment. The left side curtain air bag was approximately rectangular in shape with an angled contour at the front and back. The air bag consisted of approximately eight inflatable chambers and was 223 centimeters (87.8 inches) in length and 34 centimeters (13.4 inches) in height. The air bag was anchored to the "A" and "D" pillars with a short nylon cord. The air bag was constructed without tethers and there were no visible vent ports. Inspection of the driver's side curtain air bag revealed two small black marks near the top central portion of the air bag. However, they did not appear to be related to driver contact. They appeared to be too high on the air bag to be from the restrained, 155 centimeters (61 inches) tall driver. In addition, there was evidence of post-crash handling of the air bag, which may have been the source of the marks. The air bag's front anchor chord had been cut.

Figure 8: Case vehicle's driver side curtain air bag, each increment on rod is 5 cm (2 inches), yellow tape at top of bag shows two small black marks

Figure 9: Case vehicle driver's seat back-mounted side impact air bag

The front seat back-mounted side impact air bags were located in the outboard side of the driver's and front right passenger's seat backs. The side impact air bag deployed through a stitch seam in the side of the seat back. The driver's seat back-mounted side impact air bag deployed in this crash (**Figure 9**). The side impact air bag was approximately oval in shape and measured approximately 37 centimeters (14.6 inches) in height and 30 centimeters (11.8 inches) in width at its widest point and was constructed with a 7 centimeters (2.8 inches) wide loop of material located on its front edge. It was constructed without tethers or vent ports The inside and outside surfaces of the air bag were sewn together in two areas in circular double-stitched patterns, each approximately 7.5 centimeters (3 inches) in diameter with a 5 millimeter (0.2 inch) hole in the center of each area. Inspection of the side impact air bag revealed no evidence of damage from the deployment, and there were no marks on the air bag from driver contact.

The case vehicle's driver air bag was located in the steering wheel hub and the front right air bag was located in the top of the instrument panel. The driver's air bag did not deploy because the case vehicle's crash sensing algorithm most likely determined that the longitudinal deceleration due to the crash was not severe enough to require its deployment. The WinSMASH reconstruction supports this conclusion.

CRASH DATA RECORDING

The case vehicle's RCM, which contains the EDR, was harvested from the vehicle and sent to Washington D.C. for transfer to the manufacturer for download. The downloaded data had not been returned from the manufacturer at the time of this report submission.

CASE VEHICLE DRIVER KINEMATICS

Immediately prior to the crash the case vehicle's driver [64-year-old, White (non-Hispanic) female, 155 centimeters and 58 kilograms (61 inches, 127 pounds)] was seated in an upright position and leaning slightly forward with her back off the seat back. She had with both hands on the steering wheel, her right foot on the accelerator and left foot on the floor. Her seat was adjusted to between the forward and middle track position, the seat back was slightly reclined, and the tilt steering wheel was in it full down position. In addition, the driver was wearing glasses at the time of the crash.

The evidence indicates the case vehicle's driver was restrained by her manual, three-point, lap-and-shoulder, safety belt system. An small area of load abrasion was observed on the shoulder

belt, and the safety belt's retractor-mounted pretensioner actuated in the crash. In addition, the police crash report indicated the driver was restrained by her lap-and-shoulder belt in the crash.

The case vehicle's impact with the Jeep caused the driver's safety belt retractor to lock and the pretensioner to actuate. The driver continued forward and moved left along a path opposite the case vehicle's 290 degree direction of principal force as the case vehicle decelerated longitudinally and accelerated laterally to the right. The driver's head most likely impacted her deployed side curtain air bag causing a nonanatomic brain injury and her upper left torso impacted the seat back-mounted side impact air bag. The driver most likely rebounded off the air bags and moved to the right as the case vehicle rotated counterclockwise. The driver remained in her seat as the case vehicle traveled across the intersection and sustained a minor right rear corner impact with the Hyundai and then came to final rest. The driver complained of pain to the left side of her head, neck and lower back. She also complained of having hearing difficulty in her left ear, most likely due to the air bag deployment. The driver's use of her safety belt system and the deployment of her side curtain air bag and seat back-mounted side impact air bag mitigated her interaction with the case vehicle's interior and reduced her injury potential.

CASE VEHICLE DRIVER INJURIES

The police crash report indicated the driver sustained a "C" (possible) injury and was transported from the scene to a medical facility. The driver indicated she was treated and released and received one follow-up visit to her doctor subsequent to the crash for treatment of neck, ear and back pain. The driver was not working at the time of the crash. The table below shows the case vehicle driver's injury and injury mechanism.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 90	Injury Source (Mechanism)	Source Confidence	Source of Injury Data
	Tenderness, palpable, left upper quadrant without solid organ injury	Not coded			Emergency room records
	Hearing difficulty, not further specified	Not coded			Interviewee (same person)
	Pain {soreness} left temple area, not further specified	Not coded			Interviewee (same person)
1	Nonanatomic brain injury without loss of consciousness but with nausea and transient altered mental status in the form of disorientation	minor 160402.1,0	Air bag, driver's side inflatable curtain	Probable	Emergency room records

The 2002 Jeep Liberty was a four wheel drive, sport utility vehicle (VIN: 1J4GL58K82W------). The Jeep was equipped with driver and front right passenger dual stage air bags, which did not deploy as a result of the impact with the case vehicle. The Jeep's crash sensing algorithm most likely determined that, due to the driver's and front right passenger's restraint usage, the crash was not severe enough to require air bag deployment. The Jeep's wheelbase was 265 centimeters (104.3 inches). The Jeep's odometer reading at the time of inspection is not known because the interior was not inspected.

Exterior Damage: The Jeep's impact with the case vehicle involved the full frontal width of the Jeep. The front bumper, grill, hood and fronts of both fenders were directly damaged and crushed rearward. Direct damage began at the right corner of the front bumper and extended 152 centimeters (59.8 inches) across the front bumper. The maximum residual crush was measured as 29 centimeters (11.4 inches) occurring at C_3. The table below shows the Jeep'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	152	29	112	5	1	29	25	9	9	0	0
in		59.8	11.4	44.1	2.0	0.4	11.4	9.8	3.5	3.5	0.0	0.0

The Jeeps right side wheelbase was reduced 1 centimeter (0.4 inch) while the left side wheelbase was unchanged. Induced damage involved the hood and both fenders.

The Jeep's recommended tire size was: P235/70R16, and the vehicle was equipped with tires of this size. The Jeep'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	76	11	228	33	3	4	None	No	No
RF	145	21	228	33	4	5	None	No	No
LR	110	16	228	33	7	9	None	No	No
RR	214	31	228	33	8	10	None	No	No

Damage Classification: Based on the vehicle inspection, the CDC for the Jeep was determined to be **01-FDEW-2**. (**20** degrees). The WinSMASH reconstruction program, damage algorithm, was used on to reconstruct the case vehicle's Delta V. The Total, Longitudinal, and Lateral Delta

Vs are, respectively: 23.0 km.p.h. (14.3 m.p.h.), -21.6 km.p.h. (13.4 m.p.h.), and -7.9 km.p.h. (-4.9 m.p.h.). The Jeep was towed due to damage.

Jeep's Driver: According to the police crash report, the Jeep's driver [47-year-old, (unknown race and ethnic origin) 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 was transported by ambulance to a medical facility.

Jeep's Front Right Passenger: According to the police crash report, the Jeep's front right passenger [13-year-old (unknown race and ethnic origin) female] was restrained by her manual, three-point, lap-and-shoulder safety belt system. The police crash report indicated the front right passenger was not injured and was not transported to a medical facility.

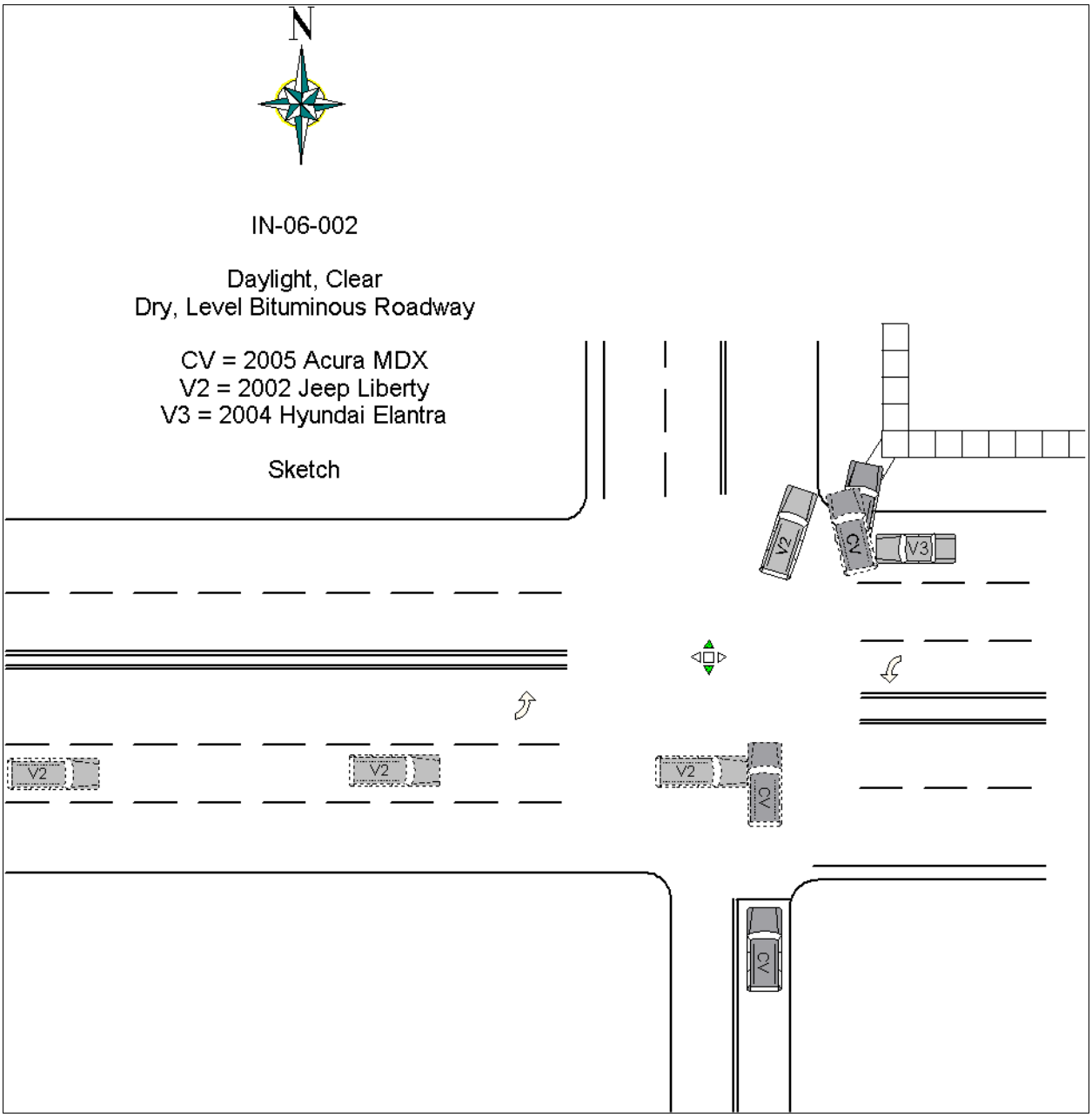
2nd Other Vehicle

The 2004 Hyundai Elantra was a front wheel drive, four-door sedan (VIN: KMHDN46D94U------) equipped with a manufacturer certified advanced 208-compliant air bag system, which did not deploy as a result of the minor impact with the case vehicle.

Exterior Damage: The Hyundai was not inspected. There were no photographs available of the damage to the Hyundai; therefore, no CDC could be assigned.

Hyundai's Driver: According to the police crash report, the Hyundai's driver [27-year-old, (unknown race and ethnic origin) female] was restrained by her manual, three-point, lap-and-shoulder, safety belt system. The police crash report indicated the driver was not injured and was not transported to a medical facility.

Hyundai's Back Right Passenger: According to the police crash report, the Hyundai's back right passenger [8-year-old (unknown race and ethnic origin) male] was restrained by his manual, three-point, lap-and-shoulder safety belt system. The police crash report indicated the back right passenger was not injured and was not transported to a medical facility.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IN-06-002
Daylight, Clear
Dry, Level Bituminous Roadway
CV = 2005 Acura MDX
V2 = 2002 Jeep Liberty
V3 = 2004 Hyundai Elantra
Sketch
V2
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