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ON-SITE CHILD RESTRAINT SYSTEM INVESTIGATION

CASE NUMBER - IN10017
LOCATION - MISSOURI
VEHICLE - 1995 DODGE NEON
CRASH DATE - May 2010

Submitted:

November 30, 2010

Contract Number: DTNH22-07-C-00044

Prepared for:

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National Highway Traffic Safety Administration
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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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On-site child restraint system investigation involving a 1995 Dodge Neon.

16. *Abstract*

This on-site investigation focused on the second row left and right child passengers of a 1995 Dodge Neon and the Graco ComfortSport Child Restraint Systems (CRSs) in which they were seated. The unrestrained 17-year-old male driver was traveling west negotiating a left curve on a wet, 2-lane, rural roadway. The vehicle lost traction and departed the north side of the roadway where the front undercarriage impacted the back slope of a ditch (event 1). The vehicle then impacted a fence (event 2) and rolled over (event 3) left side leading. During the rollover the vehicle impacted a utility pole guy wire and a fence (events 4 and 5). The vehicle rolled over a total of 10 quarter turns across a distance of 52 m (170.1 ft) to the final rest position. During the crash, the second row left passenger came out of the CRS. The child remained in the second row during the crash and sustained moderate injuries from contacting the roof. She was transported by ambulance and hospitalized for one day. The second row right passenger remained restrained in his CRS throughout the cash. He was transported by ambulance to a hospital where he was treated in the emergency room and released. The driver sustained moderate injuries. He was transported by ambulance to a hospital and transferred to a level 2 trauma center where he was admitted for one night. The Dodge was towed from the crash scene due to damage.

17. *Key Words* Child Restraint System Child Injury Motor Vehicle Traffic Crash Injury Severity		18. *Distribution Statement* General Public	
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This on-site investigation focused on the second row left and right child passengers of a 1995 Dodge Neon and the Graco ComfortSport Child Restraint Systems (CRSs) in which they were seated. This crash was brought to the National Highway Traffic Safety Administration's (NHTSA) attention on June 10, 2010 by this contractor. This investigation was assigned on June 10, 2010. The crash involved a 1995 Dodge Neon (**Figure 1**), which departed the roadway and rolled over. The crash occurred in May, 2010, at 1950 hours, in Missouri and was investigated by the Missouri State Highway Patrol. The Dodge and the crash scene were inspected on June 17, 2010. The driver interview and inspection of the CRSs were completed on June 16, 2010. This report is based on the police crash report, vehicle inspection, crash scene inspection, inspection of an exemplar vehicle, interview with the Dodge's driver, occupant kinematic principles, occupant medical records, and evaluation of the evidence.

Figure 1: The damaged 1995 Dodge Neon

CRASH CIRCUMSTANCES

Crash Environment: This crash occurred on the north side of a 2-lane, undivided, rural roadway during daylight hours and cloudy, rainy weather conditions. The roadway traversed in an east-west direction and was curved from the southwest to the west. Each travel lane was 3.4 m (11.2 ft) in width. The roadway was bordered by bituminous shoulders 2.3 m (7.5 ft) in width. There was a ditch, a barb wire fence, and utility poles on the north side of the roadway. The roadway surface was wet bituminous and the grade for the Dodge was positive 6.6%. The speed limit was 86 km/h (55 mph). There was no other traffic on the roadway at the time of the crash. The Crash Diagram is on page 13 of this report.

Pre-Crash: The Dodge was occupied by an unrestrained 17-year-old male driver, a 19-month-old female second row left passenger, and a 19-month-old male second row right passenger. Both second row passengers were restrained in forward facing CRSs. The driver was traveling west in a left curve (**Figure 2**). He stated during the SCI interview that he lived in the area and was familiar with the roadway. He was traveling at approximately 89 km/h (55 mph) when the vehicle lost traction on the wet roadway. The vehicle began to rotate counterclockwise and the driver initiated a right steering maneuver. The vehicle

Figure 2: Approach of the Dodge, arrow shows the location of road departure

then began to rotate clockwise and departed the right side of the roadway (**Figure 3**) where the crash sequence took place.

Crash: The vehicle traveled airborne across a ditch. The front undercarriage (**Figure 4**) impacted the back slope of the ditch (event 1, **Figure 3**) 6.6 m (21.6 ft) east of the edge of the roadway. The vehicle continued to rotate clockwise across a distance of approximately 7.2 m (23.6 ft) as the left side wheels furrowed into the ground. The left side plane impacted a fence (event 2) as the vehicle began to rollover left side leading (event 3). The vehicle impacted a utility pole guy wire (event 4) with the top and left side planes (**Figure 5**) during the first 2 quarter turns of the rollover. The vehicle continued to rollover through a field a distance of approximately 33.5 m (109.8 ft) where the left side plane impacted a second fence (event 5) located on the west edge of the field adjacent to a north-south roadway. The vehicle landed on its top plane on the roadway after rolling over a total of 10 quarter turns. It slid backwards on its top across the roadway to final rest in a ditch on the west side of the north-south roadway heading southeast. The vehicle traversed a total distance of 73.6 m (241.4 ft) from the initial roadway departure to the final rest position.

Post-Crash: The driver exited the vehicle through the right front door and removed the two second row passengers from the vehicle. Police and rescue personnel were notified of the crash at 1950 hours and arrived on scene at 1954 hours. All three occupants were transported by ambulance to a medical facility. The vehicle was towed from the crash scene due to damage.

Figure 3: Roadway departure into ditch; arrow shows divot from front undercarriage impact

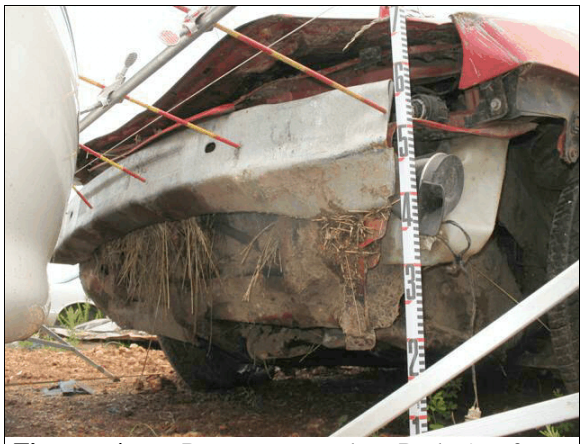


Figure 4: Damage on the Dodge's front undercarriage and bumper from the ground impact, each increment on the rods in 5 cm (2 in)

Figure 5: Damage from utility pole guy wire on roof and left front door of the Dodge

ROLLOVER DISCUSSION

The rollover of the Dodge was initiated immediately following the impact with the back slope of the ditch (event 1). As the vehicle rotated clockwise and traveled up a positive 18% grade, the left side wheels furrowed into the ground and the vehicle tripped and rolled over left side leading. The impact with the utility pole guy wire

(event 3) interrupted the rollover as energy was dissipated by the crush of the roof, the left front door, and breaking the guy wire. The vehicle continued to roll over a total of 10 quarter turns across a distance of 52 m (170.1 ft) to the final rest position. The unrestrained driver and the second row passengers remained within the vehicle throughout the crash sequence.

CASE VEHICLE

The 1995 Dodge Neon was a front wheel drive, 2-door, coupe (VIN: 1B3ES42C2SD------) equipped with a 2.0-liter, I-4 engine, and an automatic transmission. The front row was equipped with bucket seats, adjustable head restraints, lap-and-shoulder safety belts, and driver and front right passenger frontal air bags. The second row was equipped with a bench seat with folding backs, lap-and-shoulder safety belts at the outboard seating positions and a lap belt for the center seating position. The vehicle's odometer reading at the SCI inspection was 147,796 kilometers (91,836 miles). The vehicle's specified wheelbase was 264 cm (103.9 in).

CASE VEHICLE DAMAGE

Exterior Damage Event 1: The Dodge sustained damage on the undercarriage forward of the front wheels during the impact with the back slope of the ditch. The front bumper was also displaced vertically 9 cm (3.5 in) and crushed rearward 8 cm (3.1 in) by this impact. There was no vertical displacement of the frame members.

Damage Classification Event 1: The Collision Deformation Classification (CDC) for the undercarriage impact was 00UFDW2. The damage severity was minor based on the extent of the damage.

Exterior Damage Event 2: The damage from the first fence impact began on the left fender 18 cm (7.1 in) forward of the left front axle and extended 71 cm rearward on the left side. Crush measurements were taken at the upper fender level and the maximum residual crush was 12 cm (4.7 in) occurring at C_4. The table below presents the crush profile for the left fender damage.

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	2	71	12	71	2	4	7	12	8	6	118	118
in		28.0	4.7	28.0	0.8	1.6	2.8	4.7	3.2	2.4	46.5	46.5

Damage Classification Event 2: The CDC for the fence impact on the left fender was 09LFEW2. The impact with the fence was out of scope for the WinSMASH program since it was a yielding object. The severity of the damage was minor based on the extent of the damage on the fender.

Exterior Damage Event 3: The top and both side planes (**Figures 6** and **7**) sustained damage during the rollover (event 3). The direct damage on the left side plane extended from the left

fender to the left quarter panel and involved the pillars and the left roof side rail. The direct damage on the right side plane was intermittent and involved the right fender, right front door, and quarter panel. The direct damage on the top plane began on the hood 70 cm (27.6 in) forward of the front axle and extended the full length of the top plane. The full width of the roof, 110 cm (43.3 in) was also directly damaged. The maximum lateral crush (**Figure 8**) was 15 cm (5.9 in) and occurred on the left C-pillar. The maximum vertical crush also occurred on the left C-pillar and was 16 cm (6.3 in). The Dodge's left side wheelbase was extended 2 cm (0.8 in) and the right side wheelbase was unchanged.

Figure 6: Damage on the left side plane and top plane from the rollover

Figure 7: Damage on the top and right side planes from the rollover

Figure 8: The maximum vertical and lateral crush from the rollover

Damage Classification Event 3: The CDC for the rollover damage was 00TDD03. The WinSMASH program could not be used on this event since rollovers are out of scope for the program. Based on the extent of the crush on the roof, the severity of the damage from the rollover was moderate.

Exterior Damage Event 4: The top plane and left front door sustained damage during the impact with the utility pole guy wire (event 4). The direct damage was 3 cm (1.2 in) in width and extended from the right A-pillar across the roof and onto the rear portion of the left front door. The left roof side rail was crushed 35 cm (13.8 in), while the left front door was crushed 23 cm (9.1 in) by this impact.

Damage Classification Event 4: The CDC for the guy wire impact was 00TPDN4. The WinSMASH program could not be used on this event since non-horizontal impacts and impacts on the roof are out of scope for the program. Based on the extent of the crush, the severity of the damage was severe.

Exterior Damage Event 5: The left front door and left roof side rail sustained scratches during the second fence impact. There was no residual crush from this impact.

Damage Classification Event 5: The CDC for the second left side plane impact with a fence was 00LPAW2. The WinSMASH program could not be used on this event since non-horizontal and yielding object impacts are out of scope for the program. The severity of the damage was minor.

The vehicle manufacturer's recommended tire size was P165/80R13. All the tires were missing except the right front, which was a P185/60R14 size tire. The spare tire had been placed on the left front hub, but it was not bolted in place. The Dodge's tire data are presented 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	Unk	Unk	221	32	Unk	Unk	Unknown	Unk	Unk
LR	Unk	Unk	221	32	Unk	Unk	Unknown	Unk	Unk
RR	Unk	Unk	221	32	Unk	Unk	Unknown	Unk	Unk
RF	Flat	Flat	221	32	2	2	None	No	No

Vehicle Interior: The inspection of the Dodge's interior revealed no discernable evidence of occupant contact. There was no deformation of the steering wheel or compression of the energy absorbing steering column.

Both doors were jammed shut during the crash. Prior to the crash all of the window glazing was either closed for operable windows or fixed for the others. The windshield was in place and holed due to impact forces and all other glazings were disintegrated due to impact forces.

The Dodge sustained 27 intrusions of the passenger compartment. The most severe intrusions in the driver's space involved the left roof side rail, window frame, and roof, which intruded vertically 35 cm (13.8 in), 34 cm (13.4 in), and 26 cm (10.2 in), respectively. The most severe intrusions into the second row left passenger space involved the left C-pillar, backlight header, and roof which intruded vertically 23 cm (9.1 in), 20 cm (7.9 in), and 18 cm (7.1 in), respectively. The right C-pillar intruded laterally 5 cm (2 in) and the roof intruded vertically 9 cm (3.5 in) into the second row right passenger's space.

AUTOMATIC RESTRAINT SYSTEM

The Dodge was equipped with driver and front right passenger frontal air bags. The driver's air bag was located within the steering wheel hub and the front right passenger air bag was located within the top of the right instrument panel. Neither air bag deployed during this crash.

The Dodge was equipped with lap-and-shoulder safety belts in the front row and the outboard second row seating positions. The second row center position had a lap belt. The driver's safety belt was equipped with continuous loop belt webbing, a fixed upper anchor, a locking latch plate, and an Emergency Locking Retractor (ELR). The front right safety belt and the second row outboard safety belts were similarly equipped. The second row center lap belt was equipped with a locking latch plate.

The inspection of the driver's safety belt assembly revealed historical usage scratches on the latch plate. The retractor was jammed with the safety belt in the retracted position. This evidence was consistent with the driver's interview statement that he was not restrained in this crash.

The second row left safety belt assembly revealed historical usage scratches on the latch plate. No load marks were found on the webbing or the latch plate. The belt webbing was extended out of the retractor and would not retract. The driver stated during the SCI interview that the safety belt was used to secure the second row left CRS. He routed the belt through the forward facing belt path but did not pull the belt tight after buckling it. He was aware that the vehicle did not have ALR retractors in the second row outboard seats and understood the switchable feature of an ALR for securing a CRS.

The second row right safety belt webbing was cut and the latch plate was buckled. There were some historical usage scratches on the latch plate. There was no evidence of loading on the latch plate belt guide or the remaining belt webbing. The driver stated that the safety belt was used to secure the second row right CRS.

CHILD RESTRAINT SYSTEM

The inspection of the CRSs was conducted at the driver's residence. The Dodge's second row left passenger was seated in a convertible Graco ComfortSport CRS (**Figure 9**). The CRS was manufactured on June 24, 2009 and the model number was 1757846. The CRS was equipped with a 5-point harness and a harness retainer clip, which was positioned at the stomach level. There were 3 harness strap slots and the harness straps were adjusted to the highest position. The CRS was not equipped with lower anchor straps and no locking clip was present. There was a top tether, but it was not in use during the crash. The CRS was used the forward facing position. When used in this position, the CRS was designed for children who weigh between 9 and 18 kg (20 and 40 lbs) and were 102 cm (40 in) or less in height. The passenger's height and weight were 86 cm (34

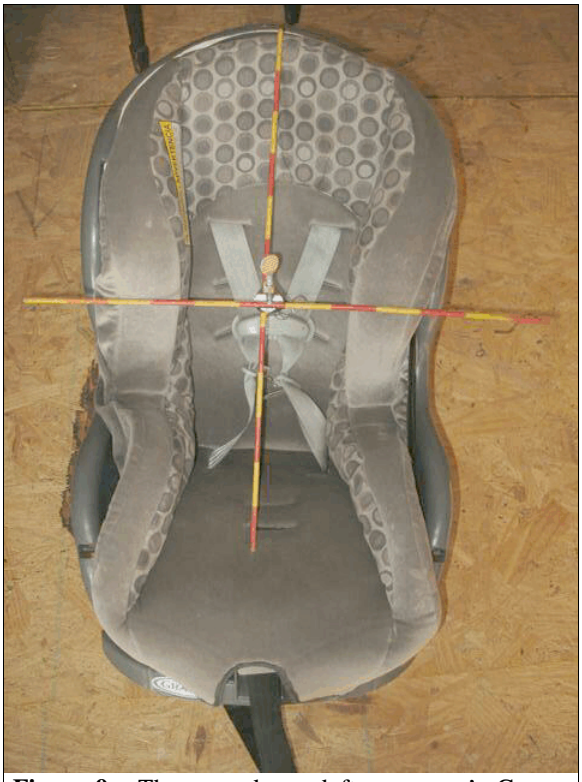


Figure 9: The second row left passenger's Graco ComfortSport CRS

in) and 11 kg (24 lbs), respectively. The CRS was secured in the vehicle by the lap-and-shoulder safety belt and no locking clip was used. The retractor was not equipped with an ALR feature.

The CRS was constructed of a one-piece plastic shell and was covered with a padded fabric cover 1 cm (0.4 in) thick. The seat back was fitted with a 1 cm (0.4 in) thick styrofoam liner and a 2 cm (0.8 in) thick foam padding. The CRS was also equipped with a recline stand. The manufacturer's instructions specified that the recline stand was to be secured in the upright position when the CRS was used in the forward facing position. The driver stated that the CRS was secured in the vehicle without the recline stand in the upright position.

Inspection of the CRS revealed stress marks on the plastic shell on the right side (**Figure 11**) front bottom, and left bottom. The plastic shell was otherwise undamaged. Some minor abrasions from the vehicle's safety belt were also found on the forward facing belt path on each side of the CRS. The crotch strap and buckle were detached from the CRS and were found undamaged in the vehicle. The bottom of the CRS and the metal bracket in which the crotch strap was anchored were also undamaged. The driver stated that the crotch strap became detached during the crash and the child came out of the CRS. Following the crash, the driver found the child in the second row laying on the roof.

The second row right passenger was also seated in a convertible Graco ComfortSport CRS (**Figure 12**). The CRS was manufactured on June 25, 2009 and the model number was 1757845. The CRS was equipped with the same features as the second row left CRS. The CRS was used in the forward facing position. When used in this position, the CRS was designed for children who weigh between 9 and 18 kg (20 and 40 lbs) and were 102 cm (40 in) or less in height. The passenger's height was 61 cm (24 in) but his

Figure 11: Yellow tape shows locations of small stress marks in the plastic shell

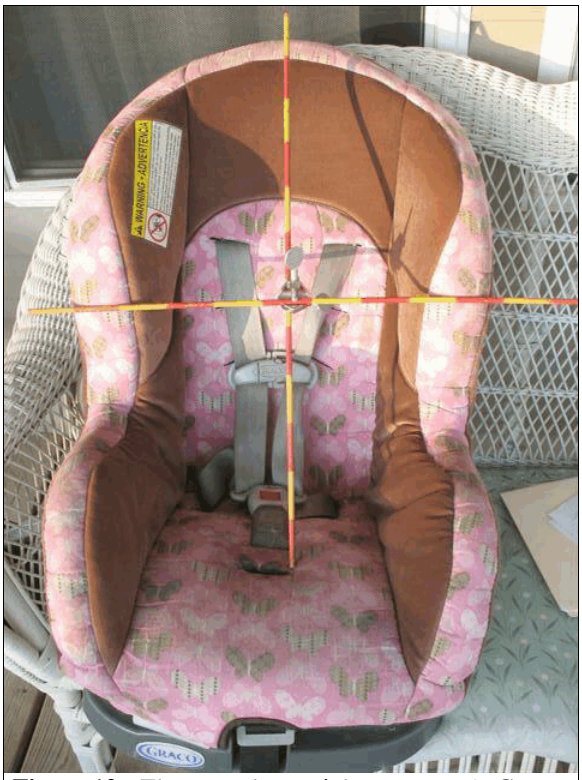


Figure 12: The second row right passenger's Graco ComforSport CRS

weight is unknown. The CRS was secured in the vehicle by the lap-and-shoulder belt. The harness retainer clip was positioned at the stomach level and the harness straps were adjusted to the highest position. This CRS was secured in the vehicle with the recline stand in the stowed position, contrary to the manufacturer's instructions.

Inspection of the CRS revealed a few minor stress marks on the plastic shell on the bottom and both sides. The plastic shell was otherwise undamaged. There was no discernable evidence of loading of the harness straps.

CASE VEHICLE DRIVER KINEMATICS

Based on the SCI interview, the unrestrained driver of the Dodge [17-year-old male, 168 cm (66 in) and 65 kg (144 lbs)] was seated in an upright posture with his back against the seat back, his right hand on the top of the steering wheel and the left arm on the top of the door. The driver's seat track was located at the middle position and his seat back was slightly reclined. The tilt steering column was located in the full down position. The driver was not wearing glasses or contact lenses.

The driver stated that as the vehicle initially started to rotate counterclockwise, he grasped the steering wheel with both hands at the approximate 10 and 2 o'clock positions and steered to the right and braked with his right foot. The steering input caused the vehicle to begin rotating clockwise and depart the roadway. The driver was displaced to the left against the left front door as the vehicle rotated. When the front undercarriage impacted the back slope of the ditch, the driver was displaced up and down in the seat. He was then redirected to the left and toward the roof as the vehicle impacted the fence and began to roll over with the left side leading. When the top plane and left side plane impacted the utility pole guy wire, the driver's head contacted the roof and his left side contacted the left front door. He sustained a closed head injury from contacting the roof. He sustained fractures of the 3rd and 4th left lateral ribs, a pulmonary contusion, contusions on the left flank overlying the ribs, and an abrasion on the left back from contacting the left front door. He also sustained abrasions on the left hand, wrist, arm, and a laceration on the chin from flying glass fragments. He remained in the front row during the rollover and came to rest in the front right passenger area with his head on the floor pan and his legs on the front right seat. The driver exited the vehicle through the right front door and removed the two second row passengers from the vehicle.

CASE VEHICLE DRIVER INJURIES

The driver was transported by ambulance to a hospital and transferred to level 2 trauma center where he was admitted for one night. The driver lost three work days and received no follow-up treatment. The table below presents the driver's injuries and injury sources.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 2005	Injury Source	Source Confidence	Source of Injury Data
1	Contusion, pulmonary, left mid lung inferiorly and laterally	moderate 441407.2,2	Left front door panel, rear upper quadrant	Probable	Hospitalization records
2	Fracture[1], nondisplaced, left lateral 3rd and 4th ribs	moderate 450202.2,2	Left front door panel, rear upper quadrant	Probable	Emergency room records
3	Closed head injury with reported loss of consciousness at scene	unknown 100099.9,0	Roof	Probable	Hospitalization records
4	Laceration to bottom of chin, not further specified	minor 210602.1,8	Noncontact injury: flying glass, left front glazing	Probable	Emergency room records
5	Abrasion left back with bleeding controlled, in left posterior axillary line	minor 410202.1,6	Left front door panel, rear upper quadrant	Probable	Hospitalization records
6	Contusion (bruising) with swelling on left flank, overlying ribs posteriorly	minor 510402.1,2	Left front door panel, rear upper quadrant	Probable	Hospitalization records
7	Abrasions (scrapes) on left hand and wrist *and*	minor 710202.1,2	Noncontact injury: flying glass, left front glazing	Probable	Hospitalization records
	on left arm with bleeding controlled, not further specified				Emergency room records

CASE VEHICLE SECOND ROW LEFT PASSENGER KINEMATICS

The second row left passenger [19-month-old female, 86 cm (34 in) and 11 kg (24 lbs)] was seated in a slightly reclined posture in the CRS restrained by the 5-point harness.

As the vehicle rotated clockwise and departed the roadway, the passenger was displaced to the left within the CRS. During the crash sequence, the CRS's crotch strap became detached and the passenger was displaced out of the CRS. She contacted the roof during the rollover, which caused a blowout fracture of the left orbit and a concussion with lacerations and abrasion on the left scalp and left side of the face. She also sustained a non-displaced fracture of the left clavicle, from loading the harness straps. The passenger remained within the second row during the rollover and came to rest on the roof. She was removed from the vehicle by the driver.

[1] The trauma facility accepted the initial hospital's diagnoses of left rib fractures but could not confirm or refute their existence.

The second row left passenger was transported by ambulance to a hospital and transferred to a second hospital. She was then transported via air ambulance to a pediatric trauma center and admitted for two days.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 2005	Injury Source	Source Confidence	Source of Injury Data
1	Fracture, blowout, left orbit floor with minimal [2 mm (0.08 in)] inferior displacement into left maxillary sinus with blood in sinus and ethmoid cells	moderate 251221.2,2	Roof	Probable	Hospitalization records
2	Concussion with reported lethargy and known head trauma with emesis x 1	minor 161001.1,0	Roof	Probable	Hospitalization records
3	Fracture, occult[2], left clavicle, non-displaced, not further specified	moderate 750651.2,2	Child safety seat harness straps	Probable	Hospitalization records
4	Laceration left scalp, not further specified	minor 110600.1,2	Roof	Probable	Hospitalization records
5 6 7	Abrasions left face including left eyelid, on bridge of nose, on left cheek, and on upper lip	minor 210202.1,2 210202.1,4 210202.1,8	Roof	Probable	Hospitalization records
8	Contusion, ecchymosis, face, with swelling, including left periorbital area[3], not further specified	minor 210402.1,2	Roof	Probable	Hospitalization records
9 10	Abrasion left abdomen/flank, not further specified with contusion (bruise) left flank	minor 510202.1,2 510402.1,2	Child safety seat's left side surface	Probable	Hospitalization records
11 12	Abrasions and contusions (bruises) lower left anterior arm and hand	minor 710202.1,2 710402.1,2	Roof	Probable	Hospitalization records
13	Abrasion posterior left arm, not further specified	minor 710202.1,2	Child safety seat's left side surface	Probable	Hospitalization records
14	Abrasion right forearm, not further specified	minor 710202.1,1	Roof	Probable	Hospitalization records

[2] Described as such only on the initial emergency room records.

[3] The left eye was described as swollen shut on some medical records.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 2005	Injury Source	Source Confidence	Source of Injury Data
15	Abrasions, multiple, on left leg, including left anterolateral thigh, proximal lateral lower leg, and calf, not further specified	minor 810202.1,2	Child safety seat's left side surface	Probable	Hospitalization records
16	Abrasions on anterior right shin and posterior right lower leg, not further specified	minor 810202.1,1	Seat back, driver's	Possible	Hospitalization records
17	Contusion on left anterolateral thigh, not further specified	minor 810402.1,2	Child safety seat's left side surface	Probable	Hospitalization records
18	Lacerations (scratches) over entire body, not further specified	minor 910600.1,0	Noncontact injury: flying glass, unknown source	Possible	Emergency room records
19	Trauma (soft tissue), right distal buttock/proximal posterior upper thigh, not further specified	minor 810402.1,1	Child safety seat's bottom surface	Possible	Emergency room records
20	Abrasion anterior right foot, not further specified	minor 810202.1,1	Seat back, driver's	Possible	Hospitalization records
21	Contusions, multiple, on anterior and posterior surfaces of both legs from hip to ankle	minor 810402.1,3	Unknown injury source	Unknown	Interviewee (driver)

CASE VEHICLE SECOND ROW RIGHT PASSENGER KINEMATICS

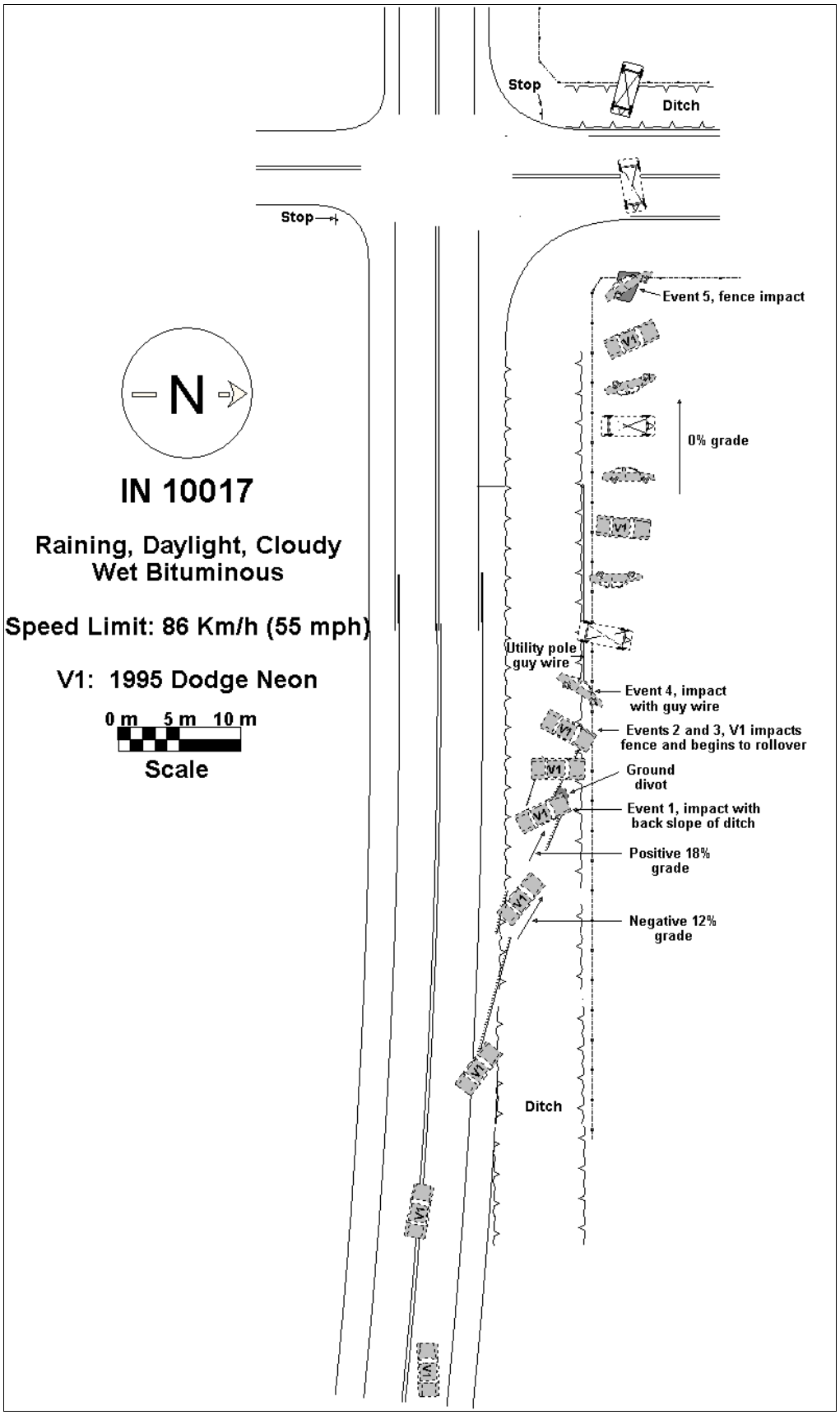
The second row right passenger [19-month-old, male, 61 cm (24 inches) and unknown weight] was seated in a slightly reclined posture in the CRS with a bottle in his hands. He was restrained by the 5-point harness.

The passenger remained restrained in the CRS throughout the crash sequence and sustained minor injuries. He was removed from the vehicle by the driver.

CASE VEHICLE SECOND ROW RIGHT PASSENGER INJURIES

The passenger was transported by ambulance to a hospital where he was treated in the emergency room and released. He received no follow-up treatment. The table below presents the passenger's injuries.

Injury Number	Injury Description (including Aspect)	NASS Injury Code & AIS 2005	Injury Source	Source Confidence	Source of Injury Data
1	Abrasion, small, right forehead, not further specified	minor 210202.1,7	Child safety seat's right side surface	Possible	Emergency room records
2	Contusion, not further specified	minor 910400.1,9	Unknown injury source	Unknown	Emergency room records


Stop
Ditch
Stop
Event 5, fence impact
N
IN 10017
Raining, Daylight, Cloudy
Wet Bituminous
Speed Limit: 86 Km/h (55 mph)
V1: 1995 Dodge Neon
0 m 5 m 10 m
Scale
0% grade
Utility pole
guy wire
Event 4, impact
with guy wire
Events 2 and 3, V1 impacts
fence and begins to rollover
Ground
divot
Event 1, impact with
back slope of ditch
Positive 18%
grade
Negative 12%
grade
Ditch