

**TRANSPORTATION SCIENCES  
CRASH DATA RESEARCH CENTER**

Veridian Engineering  
Buffalo, NY 14225

**AIR BAG RELATED CHILD PASSENGER FATALITY INVESTIGATION**

**VERIDIAN CASE NO: CA03-018**

**VEHICLE: 1997 CHEVROLET VENTURE**

**LOCATION: FLORIDA**

**CRASH DATE: FEBRUARY 2003**

Contract No. DTNH22-01-C-17002

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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 are 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 STANDARD TITLE PAGE

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<i>16. Abstract</i> <p>This investigation focused on the crash severity of a 1997 Chevrolet Venture and the identification of the resultant fatal injury mechanisms sustained by a 4 year old unrestrained female child passenger seated in the vehicle's front right position. The Chevrolet Venture was equipped with a Supplemental Restraint System (SRS) that consisted of driver and front right passenger air bags that deployed as a result of a minor front-to-rear crash sequence with a 1998 Nissan Maxima. The child passenger sustained a reported cervical spinal fracture with cord laceration as a result of contact with the deploying front right passenger air bag module cover flap. The child was removed from life support four days post-crash after it was determined that there was no hope of recovery from her injuries. The 22 year old unrestrained female driver of the Chevrolet, and the Nissan's 54 year old male driver and 33 year old male passenger were not injured in the event.</p> <p>The Crash Investigation Division of the National Highway Traffic Safety Administration (NHTSA) identified the crash via the news media on February 28, 2003. NHTSA assigned an on-site crash investigation to the Special Crash Investigations team at Veridian Engineering on the same day. Cooperation with the investigating police department was obtained. The vehicles were in the process of being repaired at the time of the on-site portion of the SCI investigation.</p>			
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**VEHICLE: 1997 CHEVROLET VENTURE  
LOCATION: FLORIDA  
CRASH DATE: FEBRUARY, 2003**

***BACKGROUND***

This investigation focused on the crash severity of a 1997 Chevrolet Venture and the identification of the resultant fatal injury mechanisms sustained by a 4 year old unrestrained female child passenger seated in the vehicle's front right position. The Chevrolet Venture was equipped with a Supplemental Restraint System (SRS) that consisted of driver and front right passenger air bags that deployed as a result of a minor front-to-rear crash sequence with a 1998 Nissan Maxima. The child passenger sustained a reported cervical spinal fracture with cord laceration as a result of contact with the deploying front right passenger air bag module cover flap. The child was removed from life support four days post-crash after it was determined that there was no hope of recovery from her injuries. The 22 year old unrestrained female driver of the Chevrolet, and the Nissan's 54 year old male driver and 33 year old male passenger were not injured in the event.

The Crash Investigation Division of the National Highway Traffic Safety Administration (NHTSA) identified the crash via the news media on February 28, 2003. NHTSA assigned an on-site crash investigation to the Special Crash Investigations team at Veridian Engineering on the same day. Cooperation with the investigating police department was obtained. The vehicles were in the process of being repaired at the time of the on-site portion of the SCI investigation.

***SUMMARY***

***Crash Site***

This two vehicle crash occurred during the evening hours of February, 2003. At the time of the crash, it was dark with overhead street lighting. There were no adverse weather conditions and the asphalt road surface was dry. The crash occurred on a four lane north/south divided roadway in a suburban commercial setting. A four-leg signalized intersection was located approximately 183 m (600 ft) south of the area of impact and influenced the movement of traffic at the time of the crash. The speed limit in the area of the crash was 72 km/h (45 mph). **Figure 1** is a southbound trajectory view at the point of impact.



**Figure 1: Trajectory view at the POI.**

## ***Crash Sequence***

### ***Pre-Crash***

The 1998 Nissan Maxima was stopped in the southbound outboard lane of the roadway operated by a 54 year old male. The front right passenger was a 33 year old male. The Nissan was stopped due to a back-up in traffic from the signalized intersection.

The 1997 Chevrolet Venture was southbound in the outboard lane driven by a 22 year old unrestrained female. The vehicle was traveling at an estimated speed of 40 km/h (25 mph). The driver's 4 year old daughter was seated in the front right position of the vehicle. The child was unrestrained. The driver reported the child was sitting upright with her legs crossed, with her back against the seat back. The driver was talking to the child which directed her attention away from the task of driving. The driver returned her attention to the road and noticed the brake lights of the stopped traffic. She applied a rapid braking force (spiked the brakes) in an attempt to avoid the crash. There were no identified pre-crash skid marks associated with this braking force.

### ***Crash***

The front plane of the Chevrolet struck the rear plane of the Nissan in a 12/6 o'clock impact configuration. The force of the impact induced deceleration caused the deployment of the Chevrolet's Supplemental Restraint System (SRS). The impact momentum of the Chevrolet displaced both vehicles forward approximately 6.7 m (22 ft) coming to rest in the outboard lane of the road. The delta V of the impact calculated by the WINSMASH model was 15.0 km/h (9.3 mph).

The driver of the Nissan reported that the traffic in front of him had just begun to accelerate forward at the time of the impact. The front of the Nissan did not impact any other vehicles. The point of impact was identified by shadow tire marks attributed to the locked rear tires of the Nissan as it was displaced forward. The shadow marks were an estimated 2 m (6 ft) long. The marks were identified during the police investigation. This physical evidence eroded by the time of the on-site SCI investigation. Neither vehicle sustained disabling damage in the event. Both vehicles were driven from the scene at the conclusion of the police investigation. **Figure 11**, attached to the end of this report, is a schematic of the crash

### ***Post-Crash***

The police and emergency services responded to the crash. The driver found the child in the front right floor pan. She was in a seated position with her knees at her chest. The mother removed the child from the vehicle and laid her on the grass at the roadside. An off-duty police officer and a nurse stopped to render aid and began CPR. The child was transported in critical condition to a local medical center and diagnosed with a cervical spine injury. Two days post-crash, she was transferred via life-flight to a regional pediatric trauma center for further management. The child was admitted, examined and found to be quadriplegic. Further diagnostic tests revealed the acute nature of her injuries and the child's poor prognosis was discussed. The child was subsequently removed from life-support four days post-crash after it was determined she would not recover from her sustained injuries.

### ***1997 CHEVROLET VENTURE***

The 1997 Chevrolet Venture was identified by the Vehicle Identification Number (VIN): 1GNDX03E0VD (production sequence deleted). The 4-door minivan was powered by a 3.3 liter, V6 engine linked to a 4-speed automatic transmission and was configured with the 305 cm (120 in) wheelbase. The service brakes were four-wheel ABS. The vehicle was configured to carry seven passengers and was equipped with manual 3-point lap and shoulder belts in the six outboard positions. The third row center position was lap belt equipped. The front restraints were equipped with retractor pretensioners. The Supplemental Restraint System (SRS) consisted of driver and front right passenger air bags. The vehicle was manufactured in February 1997 and the odometer had recorded 152,145 km (94,541 miles).

The on-site SCI inspection of the Chevrolet took place March 11, 2003 at a Chevrolet dealership. The vehicle was in the process of being repaired; the damaged exterior components had already been replaced. The vehicle's repair estimate indicated the total cost of the repair was approximately \$4,740 (parts and labor). The exterior components replaced during the repair included the following: the front bumper fascia, energy absorber, reinforcement bar, hood, headlamps and windshield. The vehicle's owner indicated that the hood and windshield damage occurred during the post-crash operation of the vehicle. He indicated that the hood was not securely latched and it opened during transport, damaging the windshield. The damage to those components was not crash related. **Figure 2** is a left front view of the Chevrolet.



**Figure 2: Left front view of the Chevrolet.**

### ***Exterior Damage***

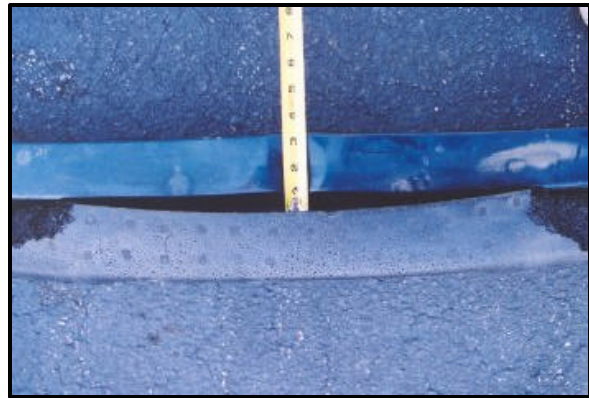
The impact damage to the front of the Chevrolet was absorbed primarily by the front bumper system. The force of the minor severity crash did not result in damage to the vehicle's uni-body structure. The bumper fascia exhibited direct contact evidence across its entire 150 cm (59 in) end width. The lower aspect of the fascia's right corner exhibited a semi-circular laceration from direct contact to end of the Nissan's exhaust pipe. **Figures 3 and 4** are views of the Venture's

damaged bumper reinforcement bar. The center aspect of the bumper reinforcement bar was deformed across a width of 46 cm (18 in). The maximum deformation measured 2.5 cm (1.0 in) on the centerline of the vehicle.

The vehicle's Collision Deformation Classification (CDC) was 12-FDLW-1. The Chevrolet's total delta V calculated by the Missing Vehicles Algorithm of the WINSMASH Collision Model was 15.0 km/h (9.3 mph). The longitudinal and lateral components were -15.0 km/h (-9.3 mph) and 0, respectively. This calculation was in general agreement with the crash event data recorded by the vehicle's Event Data Recorder (EDR). The EDR recorded a -17.4 km/h (-10.8 mph) longitudinal delta V over a 300 millisecond time frame. Please refer to the Supplemental Restraint Section and the EDR report attached at the end of this report for more information regarding the vehicle's EDR capabilities.



**Figure 3: View of the reinforcement bar and hood removed from the vehicle.**



**Figure 4: Close-up view of the deformed reinforcement bar.**

### ***1998 NISSAN MAXIMA***

The 1998 Nissan Maxima GLE was identified by the Vehicle Identification Number (VIN): JN1CA21D1WM (production sequence deleted). The 4-door sedan was equipped with a 3.0 liter, V6 engine linked to a 4-speed automatic transmission. The vehicle's manual restraint system consisted of 3-point lap and shoulder belts in the four outboard positions and a center rear lap belt. The Supplemental Restraint System (SRS) consisted of redesigned frontal air bags. The air bags did not deploy in the rear impact sequence. The date of manufacture was December 1997. The odometer reading was unknown. The vehicle was under repair at the time of the inspection and those repairs were nearly complete.

#### ***Exterior Damage***

**Figures 5 and 6** are left side and rear views of the Maxima. The Nissan was in partial disassembly and the rear bumper reinforcement had been replaced. Examination of the fascia revealed the rear bumper system sustained 150 cm (59 in) of direct contact as a result of the impact. Reportedly, the center section of the bumper reinforcement deformed approximately 10 cm (4 in) and was in contact with the aft wall of the trunk well. Examination of the vehicle identified minor repairs to the trunk well and to both rear quarterpanels. The damage to the trunk



consisted of minor buckling to the floor and was considered crash related. It was not known if the quarterpanel damage was pre-existing or related to this crash event. The vehicle's repair estimate totaled approximately \$3,110 (parts and labor).



**Figure 5: Left side view of the Nissan.**



**Figure 6: View of the repaired trunk well.**

## ***1997 CHEVROLET VENTURE***

### ***Interior***

The only interior damage sustained by the Chevrolet Venture was related to the deployment of the Supplemental Restraint System. There was no interior damage, intrusion, or occupant contacts related to the external forces of the crash. The 4-spoke, tilt steering wheel was adjusted to the lowest position. There was no steering wheel rim deformation and there was no movement of the steering column shear capsules.

The driver seat was located in a full rear track position. The driver reported that this was the seat adjustment at the time of the crash. The seat back was reclined 30 degrees aft of vertical. The horizontal distance from the seat back to the driver air bag module measured 63.0 cm (24.8 in).

The front right seat was also adjusted to the full rear position. The seat back was reclined 34 degrees aft of vertical. The horizontal distance from the seat back to the vertical face of the instrument panel measured 85.9 cm (33.8 in). This measurement was taken 41 cm (16 in) above the seat cushion. The front right passenger air bag module was set-back 3.8 cm (1.5 in) from the face of the instrument panel. The anti-submarine angle of the cushion measured 5 degrees.

### ***Manual Restraint System***

The driver's 3-point manual restraint consisted of a continuous loop webbing, sliding latch plate and a webbing sensitive emergency locking retractor. The adjustable D-ring was located 5.0 cm (2.0 in) below the highest position. The total D-ring adjustment measured 7.6 cm (3.0 in). The webbing was stowed within its retractor and the retractor was operational. The retractor spool had a weak return spring and did not fully retract the webbing, leaving approximately 5 cm (2 in) of slack in the stowed belt. Examination of the webbing and latch plate revealed signs of historical use. However, there was no crash related evidence identified on the restraint. The

driver admitted to being unrestrained at the time of the crash and was not a habitual seat belt user. Additionally, the EDR recorded the driver's safety belt as unbuckled.

The front right manual 3-point restraint was stowed within its retractor and the retractor was operational. The adjustable D-ring was 2.5 cm (1.0 in) below the highest position. Examination of the webbing and latch plate revealed historical use evidence. However, there was no identified crash related evidence on the webbing or restraint hardware. The driver admitted the front child passenger was unrestrained. The unrestrained condition of the child was supported by the occupant kinematics and damage to the front right passenger air bag described below.

The manual 3-point restraint system for the right seat, second row was stowed at the time of inspection and the belt system was operational. Examination of the restraint revealed historical evidence on the latch plate and obvious wear to the webbing, as a result of use with a child safety seat. Reportedly, the child had always been transported in a child safety seat and currently had been using a belt positioning booster seat. The driver indicated that the day of the crash was the child's first time sitting in the front seat.

#### ***Supplemental Restraint System (SRS)***

The Supplemental Restraint System (SRS) in the Chevrolet Venture consisted of driver and front right passenger air bags that deployed as a result of the crash. The air bag system was monitored and controlled by a single point Sensing and Diagnostic Module (SDM) located under the front right seat. The SDM had Event Data Recorder (EDR) capability.

The recorded data was downloaded through the vehicle's diagnostic port at the time of the SCI inspection. In summary, the data indicated the driver restraint was unbuckled, the air bag deployment command occurred 17.5 milliseconds after Algorithm Enable and the recorded delta V was -17.4 km/h (-10.8 mph) at 300 milliseconds. The recorded data was in agreement with the SCI reconstruction analyses and observations. The EDR report data is attached to the end of this document.

The driver air bag was housed within an I-configuration module that was located in the center hub of the steering wheel. The symmetrical cover flaps measured 8.9 cm x 11.4 cm (3.5 in x 4.5 in), width by height, and were not damaged. There was no evidence of occupant contact. The driver air bag measured 51 cm (20 in) in its deflated state. The air bag was not tethered and was vented by two 2.0 cm (0.8 in) diameter ports in the 11/1 o'clock sectors on the back side of the bag. There was no evidence of driver contact to the face of the bag.

The front right passenger air bag module was a top-mount design located in the right aspect of the instrument panel. Inspection of the module revealed obvious deformation to the cover flap and damage to the face of the instrument panel immediately below the module, **Figures 7 and 8**. The flap deformation resulted from contact to the chin of the child passenger during the deployment sequence. This contact was the source of the child's most severe injuries.

The cover flap was rectangular in shape and measured 39.4 cm x 25.9 cm (15.5 in x 10.2 in), width by depth. The flap was constructed of padded vinyl with a sheet metal backer. The sheet metal was designed to deform during the deployment and form the cover flap hinge. In this

crash, the forward position of the child's head impeded the rotation of the cover flap and resulted in the flap deformation. The elevation of the inboard and outboard corners of the flap measured 16.5 cm (6.5 in) and 8.4 cm (3.3 in), respectively. The deformed flap was creased along a 19.1 cm (7.5 in) depth. This crease was located 24.1 cm (9.5 in) right of the inboard edge of the flap.



**Figure 7: Overall view of the front right interior.**



**Figure 8: View of the deformed cover flap.**

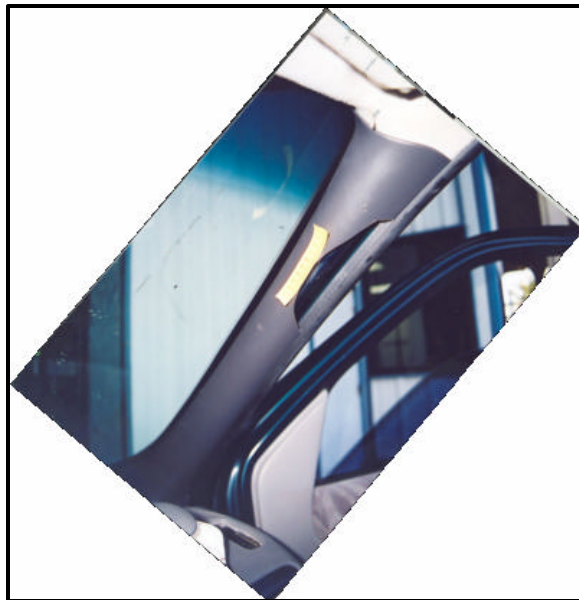
The impeded deployment caused an over-pressurization within the module resulting in a fracture of the forward right mounting bracket internal to the instrument panel (IP). The fracture of this mount allowed the air bag module to rotate counterclockwise within the IP. This rotation was evidenced by a 20 cm x 8 cm (8 in x 3 in) area of deformation to the face of the instrument panel directly below the module. Refer to **Figure 8** above.

The face of the passenger air bag measured 56 cm x 46 cm (22 in x 18 in) in its deflated state and had a rearward excursion of 36 cm (14 in). The excursion was measured from the aft edge of the module opening. The bag was tethered by four 3.8 cm (1.5 in) straps and was vented by two 2.5 cm (1.0 in) ports located on the side panels. Inspection of the air bag did not identify any direct evidence of occupant contact. The top surface of the bag exhibited a 5 cm x 10 cm (2 in x 4 in) gray vinyl transfer. This contact resulted from frictional contact to the underside of the cover flap during the deployment. A 20 cm x 8 cm (8 in x 3 in) black transfer was identified on the left perimeter of the face of the bag wrapping onto the side panel. This transfer resulted from contact to the front right window glazing. The glazing of the front windows was tinted by the

application of an aftermarket dark-colored film. Inspection of the right window glazing identified an area of abrasion corresponding to the air bag transfer, **Figure 9**. A fracture of the trim covering the right A-pillar was also noted. The fracture measured 16.5 cm x 3.8 cm (6.5 in x 1.5 in) and was located 38 cm (15 in) above the IP, **Figure 10**. The trim fracture resulted from an impact from the child's head during air bag expansion.



**Figure 9: Area abrasion to the front right glazing.**



**Figure 10: Fractured A-pillar trim.**

### **OCCUPANT DEMOGRAPHICS**

	<b>Driver</b>	<b>Front Right Child Passenger</b>
Age/Sex	22 year old / Female	4 year old / Female
Height:	168 cm (66 in)	112 cm (44 in)
Weight:	100 kg (220 lb)	16 kg (36 lb)
Restraint Use:	Unrestrained	Unrestrained
Usage Source	SCI inspection	SCI inspection
Medical Treatment	Examined and released	Fatally injured

### **DRIVER INJURY**

<b>Injury</b>	<b>Injury Severity (AIS update 98)</b>	<b>Injury Mechanism</b>
5 cm x 10 cm (2 in x 4 in) mid-chest contusion	Minor (490402.1,4)	Driver air bag

*Source: The above injury was identified during the driver's interview. She indicated the contusion faded within a few days. No medical records were available.*

### **CHILD PASSENGER INJURY**

<b>Injury</b>	<b>Injury Severity (AIS update 98)</b>	<b>Injury Mechanism</b>
Severe comminuted fracture of C2 vertebra with a dislocation of C2 on C3 and crushing injury to the spinal cord	Maximum (640276.6,6)	Deploying front right passenger air bag module cover flap
Hemorrhage of the medulla oblongata	Critical (140510.5,8)	Deploying front right passenger air bag module cover flap
Linear basilar cortical hemorrhages in the posterior frontal and parietal regions bilaterally	Critical (140646.5,3)	Deploying front right passenger air bag module cover flap
Subarachnoid hemorrhage over the posterior cerebral convexities	Serious (140684.3,1) (140684.3,2)	Deploying front right passenger air bag module cover flap
Edema over the cerebral convexities	Serious (140660.3,1) (140660.3,2)	Deploying front right passenger air bag module cover flap
Patchy basilar cortical contusions in the right parietal and occipital regions	Serious (140612.3,1)	Head impact to right A-pillar
Multiple linear contusions of the lung, bilaterally	Severe 441410.4,3	Expanding front right passenger air bag

*Note: The above referenced injuries were reported in the trauma center's Discharge Summary, Diagnostic Radiology Reports and in the Medical Examiner's Postmortem Examination Report.*

### ***CHILD PASSENGER KINEMATICS***

The 4 year old female was seated in a rear track position in an upright posture. The driver reported that she was sitting with her legs crossed on the seat with her back against the seat back. She was not using the available manual 3-point restraint. Seated in this posture, her body offered minimal resistance to any sudden change in the vehicle's dynamics.

Immediately prior to the impact, the distracted driver returned her attention to the road and rapidly applied the vehicle's brakes in an attempt to avoid the crash. The sudden application of the brakes caused the child to initiate a forward trajectory. The child rotated forward about the seat cushion and her head was in-close proximity to the front passenger air bag module cover flap at the time of the crash. The force of the impact induced deceleration was sufficient to cause deployment of the vehicle's frontal air bag system.

Upon deployment, the cover flap began to rotate open and impacted the child under the chin. This impact forced her neck into rapid hyper-extension. The vertebrae of the cervical spine exceeded their anatomical limits resulting in the comminuted fracture of the C2 vertebra and a dislocation of C2 on C3. The radiology consultation reports indicated a diagnosis of a severe contusion in that region. The spinal cord was found to be crushed at myelomedullary junction upon autopsy. The head acceleration caused by the flap contact resulted in the identified multiple brain injuries.

The forward position of the child impeded the normal deployment of the front right passenger air bag. The impeded deployment was evidenced by the fracture of the module mount within the instrument panel and instrument panel deformation. Additionally, the deployment path of the air bag was altered by the child's forward position and deflected to the right into contact with the front right window glazing.

The air bag escaped and expanded primarily out the sides of the module and lifted the child vertically. The vertical component of the motion was evidenced by a head strike that fractured the right A-pillar trim. Contact to the trim panel resulted in the right parietal and occipital brain contusions. It should be noted that the right parietal and occipital scalp revealed evidence of hemorrhage indicative of this contact, however, this injury was not AIS codeable. As the bag deflated the child came to rest in the front right floor pan area well where she was found.

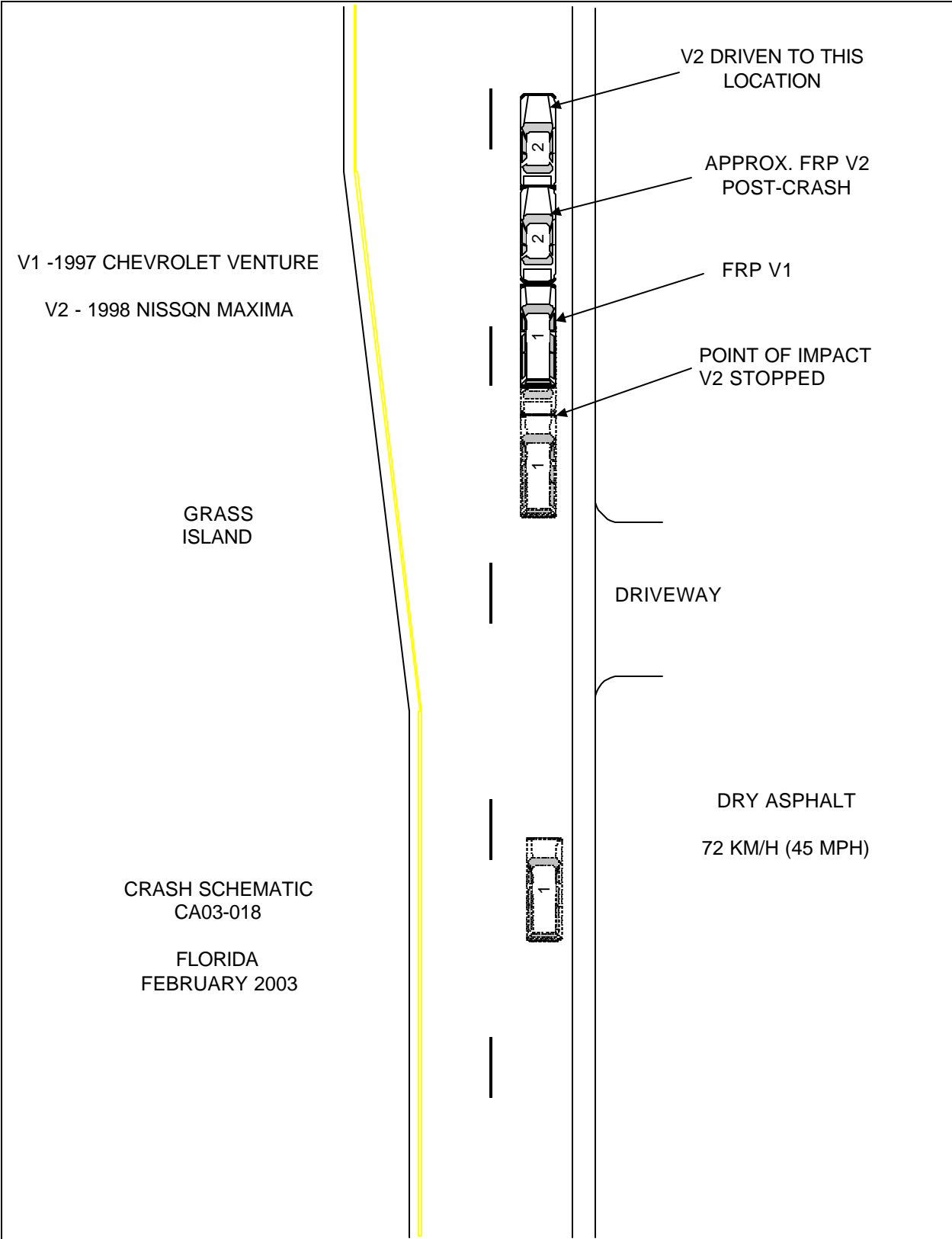


Figure 11: Crash Schematic.

ATTACHMENT A

**EDR REPORT**



Vehicle Identification Number	1GNDX03E0VDxxxxxx
Investigator	
Case Number	
Investigation Date	
Crash Date	
Filename	CA03-018 EVENT FILE.CDR
Saved on	03/10/2003 5:12:22 PM
Data check information	F6D01378
Collected with CDR version	Crash Data Retrieval Tool 1.680
Collecting program verification	
Reported with CDR version	Crash Data Retrieval Tool 1.680
Reporting program verification	
Event(s) recovered	

## SDM DATA LIMITATIONS

### SDM Recorded Crash Events:

There are two types of SDM recorded crash events. The first is the Non-Deployment Event. A Non-Deployment Event is an event severe enough to "wake up" the sensing algorithm but not severe enough to deploy the air bag(s). The SDM can store up to one Non-Deployment Event. This event can be overwritten by an event that has a greater SDM recorded forward velocity change. This event will be cleared by the SDM after the ignition has been cycled 250 times.

The second type of SDM recorded crash event is the Deployment Event. The SDM can store up to two different Deployment Events, if they occur within five seconds of one another. Deployment events can not be overwritten or cleared from the SDM. Once the SDM has deployed the air bag, the SDM must be replaced.

The data in the non-deployment file will be locked after a deployment, if the non-deployment occurred within 5 seconds before the deployment or a deployment level event occurs within 5 seconds after the deployment.

### SDM Data Limitations:

-SDM Recorded Vehicle Forward Velocity Change is one of the measures used to make air bag deployment decisions. SDM Recorded Vehicle Forward Velocity Change reflects the change in forward velocity that the sensing system experienced during the recorded portion of the event. This data should be examined in conjunction with other available physical evidence from the vehicle and scene when assessing occupant or vehicle forward velocity change. The SDM records the first 300 milliseconds of Vehicle Forward Velocity Change after Algorithm Enable. The maximum value that can be recorded for Vehicle Forward Velocity Change is 56 MPH.

-Driver's Belt Switch Circuit Status indicates the status of the driver's seat belt switch circuit.

-The Time between Non-Deployment and Deployment Events is displayed in seconds. If the time between the two events is greater than five seconds, "N/A" is displayed in place of the time.

-If power to the SDM is lost during a crash event, all or part of the crash record may not be recorded. An indication of a loss of power would be if the ignition cycles at Deployment or Non-Deployment is recorded as zero. Data recorded after that may not be reliable, such as Time Between Non-Deployment and Deployment Events, Driver Belt Switch Circuit Status, and Passenger Sir Suppression Switch Circuit Status.

### SDM Data Source:

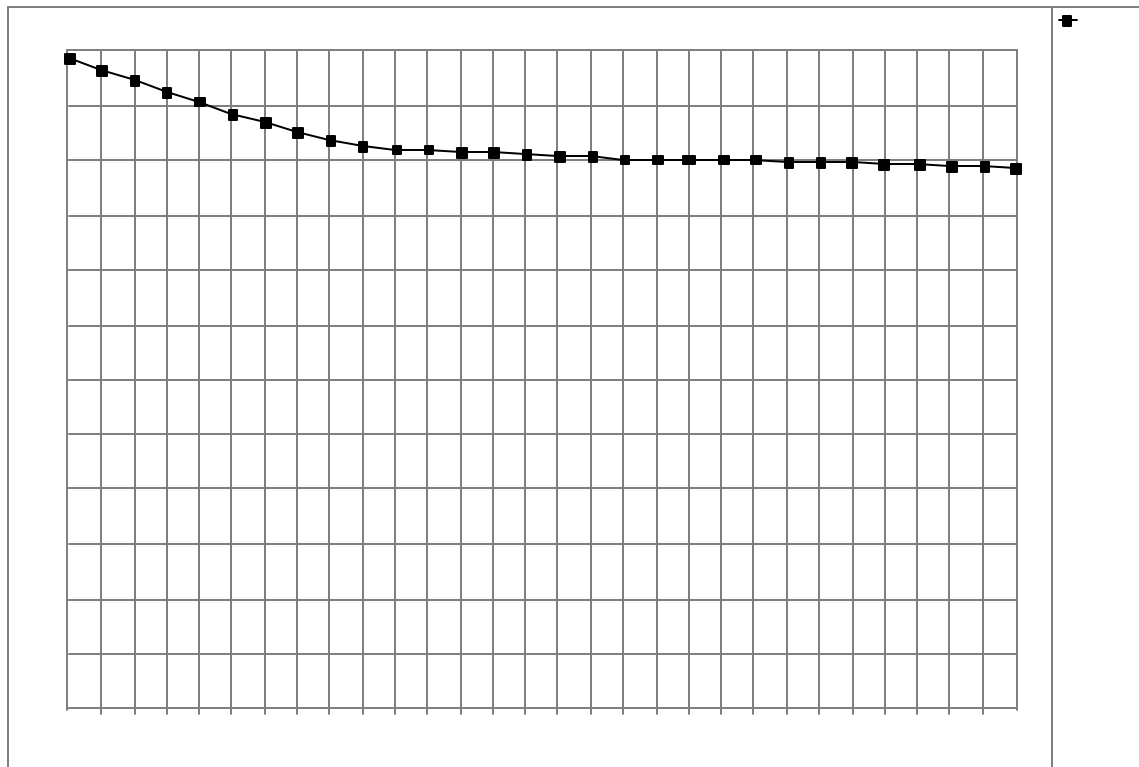
All SDM recorded data is measured, calculated, and stored internally, except for the following:

-The Driver's Belt Switch Circuit is wired directly to the SDM.

-The Passenger Front Air Bag Suppression Switch Circuit is wired directly to the SDM.

### System Status At Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	
Passenger Front Air Bag Suppression Switch Circuit Status	Air Bag Not Suppressed
Ignition Cycles At Deployment	15596
Ignition Cycles At Investigation	
Time From Algorithm Enable To Deployment Command (msec)	17.5
Time Between Non-Deployment And Deployment Events (sec)	N/A



Time (milliseconds)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Recorded Velocity Change (MPH)	-0.66	-1.76	-2.63	-3.73	-4.61	-5.70	-6.58	-7.46	-8.12	-8.56	-9.00	-9.00	-9.21	-9.21	-9.43
Time (milliseconds)	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
Recorded Velocity Change (MPH)	-9.65	-9.65	-9.87	-9.87	-9.87	-9.87	-9.87	-10.09	-10.09	-10.09	-10.31	-10.31	-10.53	-10.53	-10.75

## Hexadecimal Data

This page displays all the data retrieved from the air bag module.  
It contains data that is not converted by this program.

```
B600: 20 40 40 00 00 00 00 00
B608: 00 00 00 00 AA 00 00 00
B610: 00 00 00 00 AA 3E F9 F9
B618: F9 F9 F9 F9 7B F9 FF 00
B620: AA AA 00 00 00 00 00 7D
B628: 00 00 40 0E 03 08 0C 11
B630: 15 1A 1E 22 25 27 29 29
B638: 2A 2A 2B 2C 2C 2D 2D 2D
B640: 2D 2D 2E 2E 2E 2F 2F 30
B648: 30 31 3C EC 11 00 00 FF
B650: 00 55 55 55 AA AA 00 00
B658: 00 00 00 00 00 00 00 00
B660: 00 00 00 00 00 00 00 00
B668: 00 00 00 00 00 00 00 00
B670: 00 00 00 00 00 00 00 00
B678: 00 00 00 00 00 00 00 00
B680: 00 00 00 00 00 00 00 00
B688: 00 00 02 78 95 00 02 8E
B690: 96 00 02 90 97 00 02 95
B698: 98 00 02 96 99 00 02 97
B6A0: 9A 00 02 98 9B 00 00 00
B6A8: 00 00 00 00 00 00 00 00
B6B0: 00 00 00 00 00 00 00 00
B6B8: 00 00 00 00 00 92 6E C6
B6C0: 34 4E 1A 01 00 64 02 00
B6C8: 00 AA 00 00 00 00 01 01
B6D0: BE B3 CE B4 A8 AF BE AC
B6D8: FD BE B4 88 FA F0 00 00
B6E0: 00 00 FF FF AA 00 01 55
B6E8: 02 00 00 00 00 00 00 00
B6F0: 28 0E F0 05 50 0A 08 22
B6F8: 64 FF FF FF FF FF 32 34
B700: 42 4A 4C 4E 56 5B 5B 5B
B708: 5B 66 6F 72 75 7E 86 89
B710: 8F 9C A4 B2 B6 C5 CD DF
B718: EA F4 41 44 47 4A 4E 50
B720: 53 56 57 5A 5C 5E 5F 60
B728: 61 62 62 62 63 63 63 63
B730: 63 63 63 63 63 63 63 63
B738: 63 63 63 63 63 63 63 63
B740: 63 63 63 63 63 63 63 63
B748: 63 63 63 63 63 63 63 63
B750: 63 63 63 63 63 63 63 63
B758: 63 63 63 63 63 00 3C 01
B760: 40 14 0E 50 23 20 10 02
B768: 06 AA 04 50 51 FF FF FF
B770: FF FF 2A 2A 30 31 32 35
B778: 3A 3B 3B 3B 3B 3B 3B 3B
B780: 3B 3B 3B 3B 3B 3B 3B 3B
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B7A0: 3B 3B 3B 3B 3B 3B 3B 3B  
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B7B0: 3B 3B 3B 3B 3B 3B 3B 3B  
B7B8: 3B 3B 3B 3B 3B 00 00 00  
B7C0: 00 00 9F 17 00 00 00 00  
B7C8: 00 00 00 00 00 00 00 00  
B7D0: 00 00 00 00 00 00 00 00  
B7D8: 00 00 00 00 00 00 00 00  
B7E0: 00 00 00 00 00 00 00 00  
B7E8: 00 00 00 00 00 00 00 00  
B7F0: 00 00 00 00 00 00 00 00  
B7F8: 00 00 A5 A5 A5 A5 75 01