CRASH DATA RESEARCH CENTER

Calspan Corporation
Buffalo, NY 14225

CALSPAN ON-SITE CHILD AIR BAG RELATED FATALITY INVESTIGATION

SCI CASE NO.: CA07-005

VEHICLE: 1998 PONTIAC TRANS SPORT MONTANA

LOCATION: NEW YORK

CRASH DATE: SEPTEMBER 2006

Contract No. DTNH22-07-C-00043

Prepared for:

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Washington, D.C. 20590

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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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TABLE OF CONTENTS

CALSPAN ON-SITE CHILD AIR BAG RELATED FATALITY INVESTIGATION
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VEHICLE: 1998 PONTIAC TRANS SPORT MONTANA
LOCATION: NEW YORK
CRASH DATE: SEPTEMBER 2006

BACKGROUND

This on-site investigation focused on the severity of the crash and the source of injury that caused the death of an unrestrained 9-year-old female front right passenger of a 1998 Pontiac Trans Sport Montana **(Figure 1)**. The Pontiac was involved in a moderate severity front-to-rear collision with a 2005 Ford F-150. The Pontiac was equipped with a redesigned frontal air bag system for the driver and front right positions and buckle mounted safety belt pretensioners. As a result of the crash, the frontal air bags deployed and the safety belt pretensioners fired. The Pontiac was also equipped with an Event Data Recorder (EDR) which was downloaded for this on-site investigation. The EDR output is included in this report as **Attachment A**. In addition to the 9-year-old female, the vehicle was occupied by an unrestrained 66-year-old female driver. Immediately prior to the impact, the driver applied a rapid braking force which displaced the 9-year-old female forward into the path of the deploying front right air bag. The child passenger's neck and chin areas were struck by the cover flap as the air bag expanded, resulting in fatal injuries. The child was transported to a local hospital where she pronounced deceased; no autopsy was performed.

Figure 1. Subject vehicle 1998 Pontiac Trans Port Montana.

This September 2006 crash was identified by NHTSA's Crash Investigation Division through a search of the Fatal Analysis Reporting System (FARS). The Police Accident Report (PAR) was forwarded to the Calspan Special Crash Investigations team on Thursday, February 1, 2007 as a possible air bag related fatality investigation. The SCI team contacted the investigating police department and discussed the details of the crash. The Montana was sold at an auction facility to a local salvage yard where it was located and inspected for this SCI investigation on March 12, 2007. The crash site information was derived from the police investigation which included photo documentation and physical evidence. The crash site information documented by the investigating police agency was used for this report.

SUMMARY

Crash Site

The crash occurred on a two-lane, two-way east/west rural roadway. At the time of the crash, the weather conditions were clear and dry. The lighting conditions were dark as the roadway was not equipped with overhead luminaries. The travel lanes were surfaced with asphalt and were separated by a broken yellow lane line and bordered by white fog lines. Asphalt shoulders extended beyond the fog lines. A service station was located on the south roadside in the area of the crash. The posted speed limit for this roadway was 72 km/h (45 mph). A schematic of the crash was reconstructed from the provided police data and is included in this report as **Figure 13**.

Vehicle Data

1998 Pontiac Trans Sport Montana

The subject vehicle in this crash was a 1998 Pontiac Trans Sport Montana. The history of the vehicle and its safety systems was unknown. The Pontiac was manufactured in 10/97 and was identified by Vehicle Identification Number (VIN) 1GMDX03EXWD (production number deleted). The odometer reading at the time of the SCI inspection was 197,950 kilometers (123,000 miles). The vehicle was a three-door minivan with a rear lift gate that was equipped with a 3.4-liter, V-6 engine linked to a four-speed automatic transmission, front-wheel drive, and a steering column mounted transmission shifter. The service brakes were hydraulic front disc/rear drum with an Antilock Braking System (ABS). The vehicle was equipped with OEM five spoke alloy wheels with P215/70R15 steel belted radial tires. The vehicle manufacturer recommended front and rear tire pressure was 241 kPa (35 PSI). The specific tire data at the time of the SCI inspection was as follows:

Position	Measured Tire Pressure	Measured Tread Depth	Damage
Left Front	152 kPa (22 PSI)	4 mm (5/32”)	None
Left Rear	145 kPa (21 PSI)	6 mm (7/32”)	None
Right Front	145 kPa (21 PSI)	4 mm (5/32”)	None
Right Rear	165 kPa (24 PSI)	4 mm (7/32”)	None

The interior of the Pontiac was equipped with cloth surfaced front bucket seats and modular seats in the second and third rows. All seating positions were designed with height adjustable head restraints that were in the full-down positions at the time of the SCI inspection. Additionally, the vehicle was equipped with a tilt steering wheel that was found adjusted to the full-down position. The Pontiac’s interior options included power door locks, power windows, cruise control, air conditioning, and power mirrors.

2005 Ford F-150

The struck vehicle was a 2005 Ford F-150 pickup truck that was identified by VIN: 1FTPX14595N (production number omitted). Due to the length of time between the crash date and the case assignment, the Ford could not be located. However, partial exterior damage information was derived from the police images of the vehicle. Based

on the VIN, the vehicle was built on a 414 cm (163") wheelbase and was powered by a 5.4-liter, V-8 engine linked to a 4-speed automatic transmission.

Crash Sequence

Pre-Crash

The driver of the Pontiac was operating the vehicle eastbound on the east/west roadway. The driver of the Ford was exiting the service station and was approaching the roadway in a northeast direction. As the Pontiac neared the driveway for the service station, the driver of the Ford accelerated and turned right onto the eastbound lane. The driver of the Pontiac observed the encroaching Ford and applied a level of braking in an attempt to avoid the collision. There was no visible tire marks to support the level of braking by the Pontiac.

Crash

The driver of the Pontiac was unable to stop the vehicle as the front of the Pontiac impacted the rear of the Ford in the eastbound travel lane **(Figure 2)**. The front-to-rear impact configuration was slightly off-set, right for the Pontiac and left for the Ford. Initial contact involved the front bumper of the Pontiac against the rear bumper of the Ford; however, as the bumpers crushed the front of the Pontiac underrode the rear of the Ford. This was apparent by the deformation to the Pontiac's upper radiator support. The resultant directions of force were 12 o'clock for the Pontiac and 6 o'clock for the Ford. Due to the underride damage, the average crush profiles of the bumper and upper radiator support were used to calculate the delta-V. Additionally, the Ford was not inspected for this on-site investigation; therefore, the WINSMASH missing vehicle algorithm was used to calculate the delta-V. The total delta-V for Pontiac was 18 km/h (11.2 mph) and for the Ford was 13 km/h (8.1 mph). The longitudinal and lateral components for the Pontiac were -18 km/h (11.2 mph) and 0 km/h, respectively. The longitudinal component for the Ford was 13 km/h (8.1 mph) with a lateral component of 0 km/h. The WINSMASH calculated delta-V appeared to be underestimated based on the residual damage to the vehicles. As a result of the crash, the frontal air bag system in the Pontiac deployed and the safety belt pretensioners fired. The Pontiac EDR did not record a maximum delta-V; however, the maximum recorded velocity change at deployment command was -5 km/h (-3.3 mph). The recorded time frame from algorithm enable to deployment was 55 milliseconds (ms).

Figure 2. Area of impact.

The Ford traveled in a northeast trajectory and came to a controlled stop on the eastbound travel lane approximately 43 meters (140 feet) from the point of impact. The Montana continued its forward motion and departed the south roadside where it came to a controlled stop approximately 113 meters (370 feet) east of the area of impact. The

Montana's travel to final rest was evidenced by a rotating tire mark on the grass roadside. The later stage of the trajectory was evidence by a fluid trail resultant to the ruptured radiator.

Post-Crash

Immediately following the crash, the driver of the Pontiac reached over and cradled the right front child passenger in her arms. She held the child in the front left position until police and Emergency Medical Technician's (EMT's) arrived on-scene. The EMT's evaluated the condition of the child passenger and began medical treatment at the crash site. The 9-year-old female was transported to a local hospital where she was pronounced deceased 42 minutes post-crash. The driver's of the Pontiac and the Ford sustained minor injuries and were transported to a local hospital where they were treated and released. Both vehicles were towed from the crash site to nearby tow-yards. The Pontiac was subsequently deemed a total loss and was transferred to an insurance salvage yard where it was sold at auction.

Vehicle Damage

Exterior – 1998 Pontiac Trans Sport Montana

The 1998 Pontiac Trans Sport Montana sustained moderate severity frontal damage as result of the crash with the Ford **(Figures 3 and 4)**. The impact damage included the bumper fascia which separated bumper beam, fenders, hood, and the upper radiator support. Within the engine compartment, damage was noted to the cooling system, main wire harness, and the fuse box. In addition to the damage, the wire harness and fuse box wires were cut by the fire department.

The front of the vehicle underrode the rear of the Ford; therefore, the direct contact damage and crush profiles were documented at the level of the bumper beam and the upper radiator support. The direct contact damage on the bumper fascia measured 122 cm (48") which began at the front left corner and extended to the right, terminating 31 cm (12") inboard of the right corner. The maximum crush at the bumper level was 38 cm

Figure 3. Frontal damage to the Pontiac.

Figure 4. Left lateral view of the crush to upper radiator support.

(15”) and was located 29 cm (11.5”) right of the centerline. The crush profile at the bumper beam was follows: C1 = 0 cm, C2 = 1 cm (0.4”), C3 = 4 cm (1.6”), C4 = 7 cm (2.8”), C5 = 7 cm (2.8”), C6 = 1 cm (0.4”).

At the upper radiator support, the direct contact damage measured 145 cm (57”) and began at the left end of the radiator support and extended onto the forward aspect of the right fender. The maximum crush at the upper radiator support was 40 cm (15.7”) and was located 27 cm (10.8”) inboard of the left end of the radiator support. The residual crush at the upper radiator support was follows: C1 = 19 cm (7.5”), C2 = 40 cm (15.7”), C3 = 31 cm (12.2”), C4 = 22 cm (8.7”), C5 = 13 cm (5.1”), C6 = 0 cm. The Collision Deformation Classification (CDC) for this impact 12-FDEW-3.

The average of the bumper and upper radiator support crush was used in the WINSMASH program to calculate the delta-V. The average crush profile was as follows: C1 = 10 cm (3.9”), C2 = 21 cm (8.3”), C3 = 18 cm (7.1”), C4 = 15 cm (5.9”), C5 = 7 cm (2.8”), C6 = 0 cm.

The doors remained closed during the crash and were operational post-crash. There was no damage to the side and rear glazing. Two spider web fractures were noted to the windshield from contact by the front right air bag cover flap.

Exterior – 2005 Ford F-150

The 2005 Ford F-150 sustained moderate damage as result of the impact with the Pontiac **(Figures 5 and 6)**. This vehicle was not inspected during this on-site investigation. The damage information was based on the police provided images of the Ford. Direct contact damage was apparent on the rear plane with induced deformation to the left side of the cargo box. In addition, there was cab-to-bed contact from the forward displaced cargo bed. The direct contact damage began at the rear left bumper corner and extended right approximately three-quarters of the bumper width. The maximum crush occurred at the rear left bumper corner and was approximately 10 cm (4”). The CDC for this impact was 06-BDEW-1.

Figure 5. Rear plane damage to the Ford.

Figure 6. On-scene image of the resultant damage to the Ford.

Interior – 1998 Pontiac Trans Sport Montana

The interior of the Pontiac sustained minor damage that was attributed to air bag deployment and occupant contact points. The moderate severity crash did not produce intrusion of the passenger compartment. The damage from the deploying front right air bag consisted of two spider-web pattern fractures to the right side of the windshield. The first area of contact was located 29 cm (11.4") inboard of the right A-pillar and 51 cm (20") below the windshield header. The second windshield contact was located 48 cm (18.9") inboard of the right A-pillar and 51 cm (20") below the windshield header.

The driver loaded the deploying front left air bag and these forces were transferred through the air bag and into the steering wheel rim, resulting in 4 cm (1.5") of forward deformation to the upper half of the wheel rim. There was no compression of the energy absorbing steering column or shear capsules.

The front right passenger was displaced forward during the pre-crash braking. She was out-of-position forward during the deployment of the front right air bag resulting in extensive interaction with the front right air bag module cover and the expanding membrane. This interaction and contact points are noted in the ***Air Bag*** section of this report.

Frontal Air Bag System – 1998 Pontiac Trans Sport Montana

The Pontiac was equipped with redesigned frontal air bags for the driver and front right occupant positions. The history of the safety system was unknown. The system deployed as a result of the impact sequence with the Ford **(Figure 7)**.

Figure 7. Deployed frontal air bag system.

The driver's air bag was contained within the four-spoke steering wheel and was concealed by two symmetrical I-configuration cover flaps. The flaps were 11 cm (4.25") wide and 8 cm (3.125") in height. The air bag membrane measured 61 cm (24") in diameter in its deflated state and was not tethered. The air bag vented into the passenger compartment through two vent ports on the back side of the air bag at the 3 and 9 o'clock sectors. The maximum rearward excursion of this non-tethered bag was 47 cm (18.5"). There was no damage or evidence of driver contact on the deployed air bag. The driver cradled the front passenger on her lap post-crash which resulted in transfer of body fluid at the 1 o'clock sector of the air bag membrane. The following identifiers were present on the air bag membrane:

16760?? 9-01
PONT W/ALL U
TCAP70489426

The front right passenger air bag was a top-mount design, incorporated into the right instrument panel. A single cover flap concealed the front air bag. The cover flap measured 36 cm (14”) in width and 19 cm (7.5”) in depth. The cover flap was constructed of a vinyl top with a steel backer panel. Prior to the impact, the driver applied a level of braking which resulted in the forward displacement of the front right passenger. At impact, the frontal air bag system deployed which resulted in interaction between the front right passenger and the deploying front right air bag. This interaction was evidenced by a tissue transfer on the cover flap and deformation of the vinyl top and steel backer panel **(Figure 8 and 9)**. The transferred tissue measured 5 cm (2”) in height and 0.3 cm (0.125”) in width. The transfer was located right of the centerline from 5-10 cm (2-4”) forward of the leading edge. The deformation of the vinyl top and steel backer panel was a V-shaped crease that was 6 cm (2.5”) in width and extended from the leading edge to the rear edge. Additionally, the forward edge of the flap contained fragments of tissue. The cover flap rotated the child’s head up and rearward as it continued to open, hyper-extending the child’s neck.

Figure 8. Deformed front right air bag module cover flap.

Figure 9. Steel backer panel deformation.

The air bag membrane was rectangular in shape with dimensions of 74 cm (29”) in height and 48 cm (19”) in width. The membrane was tethered by two wide band tethers that were 48 cm (19”) in width. Two vent ports on the side panels at the 3 and 9 o’clock positions vented the air bag. The rearward excursion of this air bag was 33 cm (13”) at the tether locations.

Figure 10. Damage to the instrument panel from the impeded deployment.

As a result of the forward position of the child against the cover flap, the deployment of the air bag was impeded. This impeded deployment was evidenced by rearward displacement (outward bowing) of the mid-instrument panel **(Figure 10)**. The rearward deformation was 10 cm (3.75”) at the greatest point and was located 32-43 cm (12.5-17”)

inboard of the right edge of the instrument panel. The following nomenclature was present on the air bag:

1? 757? 2659
1996511VAN
TJAG70249496

As the air bag continued to expand, the bottom and right side panels of the membrane contacted the child passenger. This contact was evidenced by blue fabric transfers on the air bag membrane. The blue fabric transfers on the bottom panel were numerous and vertically oriented **(Figure 11)**. The total of area of the transfers measured 27 cm (10.5") in width and 36 cm (14") in height. A blue fabric transfer that was 4 cm (1.75") in width and 25 cm (10") in height was present on the right side panel **(Figure 12)**.

Figure 11. Vertically oriented blue fabric transfers on the bottom panel.

Figure 12. Blue fabric transfer on the right side pane.

Event Data Recorder (EDR) – 1998 Pontiac Trans Sport Montana

The Montana was equipped with an EDR that was removed from the vehicle and downloaded for this investigation. The primary procedure for downloading this particular EDR is though the Diagnostic Link Connector (DLC); however, during the crash, damage to the main wire harness and fuse box occurred. In addition to the damage, the wire harness and fuse box wires were cut by the fire department, thus eliminating a download through the DLC. Due to the limited production numbers of this EDR, a cable to download directly from the module was not manufactured by the Vetronix Company.

The download required a cable that was manufactured by the safety division of General Motors. General Motors provided a cable to the Calspan SCI team which was used to obtain the EDR data through a desktop download. The EDR data showed that the driver's safety belt was not buckled at the time of the crash and the deployment time of the frontal air bag system was 55 ms of Algorithm Enable (AE). In addition, the maximum recorded velocity change at deployment was -5 km/h (-3.3 mph). The EDR output is included in this report as **Attachment A**.

Side Impact Air Bag System – 1998 Pontiac Trans Sport Montana

The Pontiac was equipped with seatback mounted side impact air bags for the front seating positions. The side impact air bags did not deploy in the crash.

Manual Safety Belt Systems – 1998 Pontiac Trans Sport Montana

The 1998 Pontiac Trans Sport Montana was equipped with manual three-point lap and shoulder belt systems for the six outboard-seated positions.

The driver's belt was configured with continuous loop webbing, sliding latch plate, height adjustable D-ring that was in the full-up position at the time of the SCI inspection, and a buckle mounted pretensioner that fired during the crash. The driver's safety belt retracted onto an Emergency Locking Retractor (ELR). An aftermarket comfort sleeve was present on the shoulder portion of the safety belt. The manufacturer of this device was 3R Racing. The driver did not use the safety belt in the subject crash which was supported by the lack of loading evidence on the belt webbing and hardware surfaces.

The front right safety belt system retracted onto a switchable ELR/Automatic Locking Retractor (ALR) and was equipped with a sliding latch plate, height adjustable D-ring that was in the full-down position at the time of the SCI inspection, and a buckle mounted pretensioner that fired during the crash. The 9-year-old female front right passenger did not use the safety belt in the crash. The lack of belt usage was supported by out-of-position status and interaction with front right air bag system.

The outboard second row safety belts were equipped with switchable ELR/ALR and sliding latch plates. The second row center safety belt was a fixed length lap belt with a sewn-on latch plate and an ALR. The second row was not occupied during the crash; therefore, the safety belts were not used.

The third row safety belts were equipped with locking latch plates and switchable ELR/ALR. These safety belts were not used in the crash. All safety belts exhibited historical use which included minor scratching on the metal surfaces of the latch plates.

Occupant Demographics/Data

Driver

Age/Sex:	66- year-old/Female
Height:	Not reported
Weight:	Not reported
Seat Track Position:	Mid-track position
Eyewear:	Unknown
Manual Safety Belt Usage:	None used
Usage Source:	Vehicle inspection
Egress from Vehicle:	Unassisted through left door
Mode of Transport from Scene:	Transported by ambulance to a local hospital
Type of Medical Treatment:	Treated and released

Driver Injuries

Injury	Injury Severity AIS90/Update 98	Injury Source
Minor injuries, NFS	Unknown	Unknown

Source – Police report

Driver Kinematics

The 66-year-old female driver of the 1998 Pontiac Trans Sport Montana was seated in a presumed upright driving posture and was not restrained by the manual belt system.

Prior to the impact, the driver applied the brakes, which displaced her slightly forward. At impact, the frontal air bag deployed and the driver initiated a forward trajectory in response to the 12 o'clock direction of force. The driver loaded the air bag with her chest and head. Her loading force was transmitted through the air bag which resulted in deformation of the upper steering wheel rim. As a result of the crash, the driver sustained police reported minor injuries and was transported to a local hospital where she was treated and released.

Front Right Occupant

Age/Sex:	9-year-old/Female
Height:	Not reported
Weight:	Not reported
Seat Track Position:	Rear-track position at the time of the SCI inspection
Manual Safety Belt Usage:	None used
Usage Source:	Vehicle inspection
Eyewear:	Unknown
Egress from Vehicle:	Removed from vehicle by emergency responders
Mode of Transport from Scene:	Transported by ambulance
Type of Medical Treatment:	Resuscitative efforts by EMT's, pronounced deceased at a local hospital

Front Right Occupant Injuries

Injury	Injury Severity (AIS 90, Update 98)	Injury Source
Band-like abrasions to the anterior and lateral neck, NFS	Minor (390202.1,5)	Expanding front right air bag
Three large gapping lacerations length unknown, to the anterior neck which appear to be full thickness into the subcutaneous tissue, NFS	Minor (390604.2,5)	Front right air bag cover flap
Mandible fracture, NFS	Minor (250600.1,9)	Front right air bag cover flap

Source– Death certificate and police images of the right front passenger. Additionally, the injury information was derived from the police images of the child and the death certificate. The family refused an autopsy. The medical data was limited to the injuries noted in this report. It should be noted, that the child probably sustained severe injuries of the head and neck from the deployment of the frontal air bag.

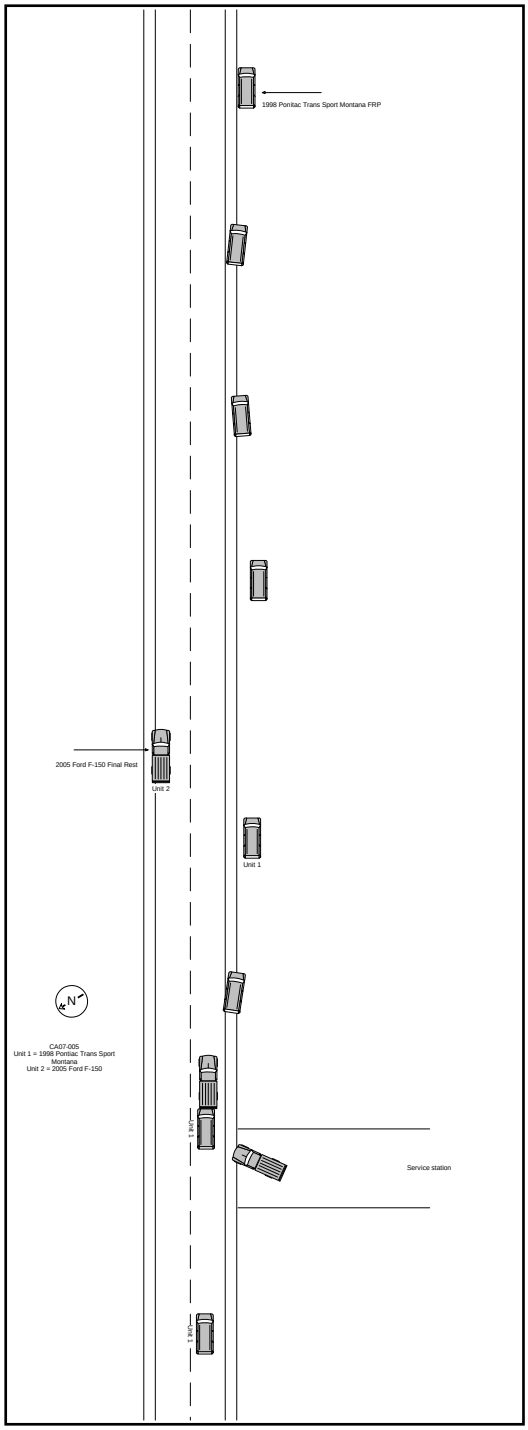
Front Right Occupant Kinematics

The 9-year-old female front right occupant was seated in a presumed rear-track position based on the on-scene police images of the vehicle. She was not restrained by the 3-point lap and shoulder belt. Prior to the impact, the driver applied a level of braking which displaced her forward.

At impact with the Ford, the front right air bag deployed as the 9-year-old female was positioned against the instrument panel with her head positioned over and in close proximity to the front right air bag cover flap. As the cover flap opened, it contacted her neck and chin areas resulting in the three large gapping lacerations to the anterior neck and the mandible fracture. As the cover flap continued to open, her head was rotated upward and rearward hyper extending the neck. The air bag membrane was impeded by the forward position of the child passenger against the cover flap subsequently deforming the mid-instrument panel as it continued to expand. During the early expansion of the air bag, it contacted the child's neck producing band-like abrasions of the lateral and anterior neck. The continued expansion of the air bag engaged the torso of the child passenger as she was deflected upward and rearward. Blue fabric transfers were present on the right and bottom aspects of the air bag.

The final rest position of the 9-year-old female was unknown. The driver cradled her post-crash which resulted in body fluid transfer to the driver's frontal air bag.

Figure 13: Scene Schematic



Attachment A: EDR Output

CDR File Information

Vehicle Identification Number	1GMDX03EXWD******
Investigator	
Case Number	
Investigation Date	
Crash Date	
Filename	
Saved on	
Collected with CDR version	Crash Data Retrieval Tool 2.800
Collecting program verification number	9238B95E
Reported with CDR version	Crash Data Retrieval Tool 2.800
Reporting program verification number	9238B95E
Interface used to collected data	Block number: 00 Interface version: 4A Date: 11-08-05 Checksum: 7500
Event(s) recovered	Deployment

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 cannot 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 Event file will be locked after a Deployment Event, if the Non-Deployment Event occurred within 5 seconds before the Deployment Event unless a Deployment Level Event occurs within 5 seconds after the Deployment Event, and then the Deployment Level Event will overwrite the Non-Deployment Event file.

SDM Data Limitations:
-SDM Recorded Vehicle Forward Velocity Change reflects the change in forward velocity that the sensing system experienced during the recorded portion of the event. SDM Recorded Vehicle Forward Velocity Change is the change in velocity during the recording time and is not the speed the vehicle was traveling before the event, and is also not the Barrier Equivalent Velocity. 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 maximum Vehicle Forward Velocity Change recorded from Algorithm Enable to Deployment Command Criteria Met.
-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 the event is recorded as zero. Data recorded after that may not be reliable, such as Time Between Non-Deployment and Deployment Events and Driver Belt 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.

System Status At Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	UNBUCKLED
Ignition Cycles At Deployment	22856
Ignition Cycles At Investigation	22858
Maximum SDM Recorded Velocity Change When Deployment Command Criteria Was Met (MPH)	-3.29
Time From Algorithm Enable To Deployment Command (msec)	55
Time Between Non-Deployment And Deployment Events (sec)	N/A

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:  21 0C 12 13 88 00 00 00
B608:  00 00 55 00 00 00 00 00
B610:  00 00 55 00 00 00 00 00
B618:  5B F9 F9 F9 6C F9 F9 F9
B620:  F9 FF AA AA 00 00 00 00
B628:  00 7D 00 00 00 00 80 00
B630:  2C 0F 0F 2D 59 48 00 30
B638:  00 00 00 FF 00 FF F7 00
B640:  00 00 00 00 00 00 00 00
B648:  00 00 00 00 00 00 00 00
B650:  00 00 00 00 00 00 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 00 00 00 00 92 81
B690:  00 00 95 82 00 00 00 00
B698:  00 00 00 7D FA 00 00 7D
B6A0:  FA 00 00 7D FA 00 00 7D
B6A8:  FA 00 00 7D FA 00 00 00
B6B0:  00 00 00 00 00 64 02 00
B6B8:  00 01 01 30 8E 70 FF 00
B6C0:  B8 70 19 0E 94 6B 00 00
B6C8:  00 00 00 00 00 00 00 00
B6D0:  00 00 00 00 00 00 00 00
B6D8:  00 00 00 00 00 AA 01 02
B6E0:  00 55 01 00 00 00 00 00
B6E8:  00 00 00 00 AA 03 03 20
B6F0:  0A 28 03 08 00 80 00 18
B6F8:  06 02 00 24 0C 00 FF 00
B700:  00 1C 06 00 12 1C 18 08
B708:  00 00 0C 00 5B 00 3C 06
B710:  0A 00 24 0C 00 FF 00 00
B718:  16 09 00 0B 20 18 78 10
B720:  00 3C 00 00 00 00 00 10
B728:  00 02 06 02 04 02 01 01
B730:  04 1C 09 00 80 00 14 5D
B738:  8B 00 00 00 00 00 00 00
B740:  00 00 00 00 00 00 00 00
B748:  00 00 00 00 00 00 00 00
B750:  00 00 00 00 00 00 00 00
B758:  00 00 00 00 00 00 00 00
B760:  00 00 00 00 00 00 00 00
B768:  00 00 00 00 00 00 00 00
B770:  00 00 00 00 00 00 00 00
B778:  00 75 FD 00 00 00 00 00
B780:  00 00 00 00 00 00 00 00
B788:  00 00 00 00 00 00 00 00
B790:  00 00 00 00 00 00 00 00
B798:  00 00 00 00 00 00 00 00
B7A0:  00 00 00 00 00 00 00 00
B7A8:  00 00 00 00 00 00 00 00
B7B0:  00 00 00 00 00 00 00 00
B7B8:  00 00 00 00 00 00 00 00
B7C0:  00 00 00 00 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 A5 A5 A5 A5 00
```

```
B7F0:  00 BD CA BE AC 79 7E B4
B7F8:  E8 D6 90 CE CC AE B8 00
```