CRASH DATA RESEARCH CENTER
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CALSPAN ON-SITE CERTIFIED ADVANCED 208-COMPLIANT VEHICLE CRASH INVESTIGATION
SCI CASE NO.: CA09073

VEHICLE: 2008 DODGE CALIBER SE

LOCATION: NORTH CAROLINA

CRASH DATE: OCTOBER 2009

Contract No. DTNH22-07-C-00043

Prepared for:

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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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16. Abstract This on-site investigation focused on the Certified Advanced 208-Compliant frontal air bag system in a 2008 Dodge Caliber. The Dodge was involved in an off-road offset frontal crash with a tree. The Dodge was equipped with four-wheel anti-lock brakes, a Certified Advanced 208-Compliant (CAC) frontal air bag system, a driver's knee air bag, and side impact Inflatable Curtain (IC) air bags. The CAC system design included Low Risk Deployment dual-stage frontal air bags for the driver and right front passenger positions, seat track positioning sensors, buckle switch sensors, and retractor pretensioners. The front left corner area of the Dodge impacted a tree, resulting in deployment of the driver and passenger side frontal air bags, the driver's knee air bag and the left side IC air bag. The 30-year old female driver of the Dodge sustained minor soft-tissue injuries and was transported to a local hospital where she was treated in the emergency department and released.			
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BACKGROUND

This on-site investigation focused on the Certified Advanced 208-Compliant frontal air bag system in a 2008 Dodge Caliber **(Figure 1)**. The Dodge was involved in an off-road offset frontal crash with a tree. The Dodge was equipped with four-wheel anti-lock brakes, a Certified Advanced 208-Compliant (CAC) frontal air bag system, a driver's knee air bag, and side impact Inflatable Curtain (IC) air bags. The CAC system included Low Risk Deployment dual-stage frontal air bags for the driver and right front passenger positions, seat track positioning sensors, buckle switch sensors, and retractor pretensioners. The front left corner area of the Dodge impacted a tree, resulting in deployment of the driver and passenger side frontal air bags, the driver's knee air bag and the left side IC air bag. The 30-year old female driver of the Dodge sustained minor soft-tissue injuries and was transported to a local hospital where she was treated in the emergency department and released.

Figure 1: Left front oblique view of the 2008 Dodge Caliber.

The vehicle was identified through a visit to a regional vehicle salvage facility on October 19, 2009. An image of the Dodge was forwarded to the Calspan Special Crash Investigations (SCI) team for review on the same day. Based on the location and severity of the damage, and the deployment of the frontal, knee, and IC air bags, this case was assigned for an on-site investigation on October 20, 2009. The on-site investigation was initiated on October 23, 2009. The investigation will involved the inspection and documentation of the Dodge, interviews with the driver of the vehicle and the owner of the house in front of which the crash occurred, and the documentation of the crash site. Additionally, the Event Data Recorder (EDR) of the Dodge was imaged during the inspection.

SUMMARY

Crash Site

This crash occurred during the daylight hours of October 2009 on an undivided, two-lane east/west residential roadway. The environmental conditions were cloudy and dry at the time of the crash. The roadway consisted of two asphalt surfaced travel lanes with no painted lines dividing the lanes. The roadway measured 5 m (16.4 ft) in width. The crash sequence began in a cul-de-sac where the driver had backed out of a private driveway. The cul-de-sac measured 21.4 m (70.2 ft) in diameter and was surfaced in asphalt. The roadway near the cul-de-sac was straight and had a positive 1.6 percent grade in the westbound direction. The roadside near the cul-de-sac was surfaced with grass and had a negative grade that extended north from the roadway and transitioned from a -1.6 percent grade to a -4.9 percent grade perpendicular to the roadway. At the bottom of this grade, 4.2 m (13.8 ft) north of the roadway was the remains of a landscape wall that measured 45 cm (17.7 in) in height. There was no wood retaining material remaining and the wall consisted of only soil. This area also included several small trees with overhanging limbs. Farther along the Dodge's path of travel, the roadway transitioned to a positive grade of 1.6 percent and curved to the left with a radius of curvature of 120 m (394 ft). In the area in which the Caliber departed the roadway the second time, the north roadside was surfaced with grass and had a negative grade of -1.6 percent for a distance of 1.1 m (3.6 ft) and transitioned to a grade of -29 percent into a ditch centered 3.1 m (10.2 ft) north of the roadway. North of this ditch was a grass-surfaced residential yard that contained several trees. A 50 cm (19.7 in) diameter pine tree stood 6.6 m (21.7 ft) north of the roadway in a 25 cm (9.8 in) raised landscape bed. The landscape bed measured 2.4 m (7.9 ft) in diameter. Northwest of this pine tree was a second landscape bed 4 m (13.1 ft) in length and 2.6 m (8.5 ft) in width that contained several small plants and bushes. The posted speed limit in the area of this crash was 40 km/h (25 mph). The Scene Schematic is included as **Figure 11** of this report.

Vehicle Data

2008 Dodge Caliber

The 2008 Dodge Caliber SE was manufactured in December, 2007 and was identified by the Vehicle Identification Number (VIN) 1B3HB28B68D (production sequence deleted). The vehicle was purchased new in July 2008 and the interviewee-reported odometer reading was approximately 24,135 km (15,000 mi) at the time of the crash.

The front-wheel drive Dodge was powered by an inline 2.0-liter, 4-cylinder transverse-mounted engine linked to an automatic Continuously Variable Transmission (CVT). The braking system consisted of power-assisted front disc and rear drum brakes with four-wheel anti-lock. The Dodge was also equipped with an indirect Tire Pressure Monitoring System (TPMS). The TPMS instrument panel warning light was reported by the driver in the interview to be off prior to the crash. The Dodge was equipped with Dunlop SP50 tires mounted on 15-inch OEM steel wheels with plastic wheel covers. The P205/70R15 tire size matched the vehicle manufacturer

recommendation. The vehicle manufacturer recommended cold tire pressure was 221 kPa (32 PSI) for the front and rear. The specific tire data at the time of the SCI inspection was as follows:

Position	Measured Tire Pressure	Measured Tread Depth	Damage
Left Front	Tire flat	3 mm (4/32 in)	Rim deformed, tire de-beaded
Left Rear	186 kPa (27 PSI)	4 mm (5/32 in)	None, grass in bead
Right Front	Tire flat	3 mm (4/32 in)	De-beaded
Right Rear	34 kPa (5 PSI)	4 mm (5/32 in)	None

The interior of the Dodge was configured with cloth-surfaced five-passenger seating. The front bucket seats were separated by a center console and equipped with adjustable head restraints. The front left head restraint was in the full-down position. The front right head restraint was 6 cm (2.4 in) above the full-down position. The driver seat track was adjusted to a mid-position 11 cm (4.3 in) forward of the full-rear position. The front right seat track was in the full-rear position. The driver seat back angle measured 25 degrees aft of vertical; the front right seat back angle was 23 degrees aft of vertical. The second row consisted of a single bench seat with a 60/40 split-folding back. The two outboard seating positions were equipped with integral head restraints; there was no head restraint for the center position.

The interior occupant safety systems consisted of 3-point lap and shoulder belt systems for the five designated seating positions, front safety belt retractor pretensioners, Low Risk Deployment dual stage CAC frontal air bags, and IC air bags that provided protection for the four outboard seating positions.

Crash Sequence

Pre-crash

The unrestrained 30-year-old female driver of the Dodge operated the vehicle south in reverse from a residential driveway into a cul-de-sac. She then shifted into drive and accelerated quickly in a westbound direction of travel. **Figure 2** depicts the original trajectory of the Dodge. The vehicle departed the roadway to the right at the edge of the cul-de-sac at an angle of 15 degrees right of the roadway. The driver continued to accelerate as she approached the trees and landscape wall. Two 47.2 m (154.8 ft) long arcing tire marks through the roadside grass defined the vehicle's trajectory.

Figure 2: Initial trajectory of the Dodge.

Crash

The right plane of the Dodge sideswiped the landscape wall and trees **(Figure 3)**, resulting in minimal crush to the right front wheel flare and surface scratching that extended from slightly forward of the right front wheel flare to 36 cm (14.2 in) rear of the right rear axle (Event 1). The right side mirror was detached from the vehicle during the first event, and the surface scratching resulting from contact with tree branches extended vertically from the door sill level to the roof side rail. The direction of force for this initial impact was within the 12 o'clock sector. An analysis of this impact was outside the scope of the WinSMASH program.

Figure 3: Landscape wall and trees sideswiped in initial impact.

The Dodge continued to accelerate forward during this multiple impact crash sequence. The vehicle returned to the roadway, crossed the center of the road, and entered the oncoming lane. The driver then initiated an evasive steering input to the right. The Dodge crossed the roadway a second time and departed the road. The Dodge travelled a straight path from the departure as evidenced by 24 m (78.7 ft) long tire marks in the grass roadside. The left corner of the Dodge's front plane then impacted a 50 cm (19.7 in) diameter pine tree (Event 2). The vertical damage to the pine tree began 16 cm (6.3 in) above the ground extended to a height of 80 cm (31.5 in). The pine tree impacted in the second event is depicted in **Figure 4**. The direction of force for this impact was within the 12 o'clock sector to the Dodge. The EDR-reported speed of the Dodge at the time of the impact was 62 km/h (39 mph).

Figure 4: Pine tree impacted in event 2.

The force of the impact actuated the driver's and front right passenger's safety belt pretensioners, although these belts were not buckled and the belts were in the stowed position prior to the crash. The impact force deployed the driver's frontal air bag and knee air bag, the front right passenger's frontal air bag and the left side impact IC air bag. The Damage-only Algorithm of the WinSMASH program was used to calculate a total delta-V of 13 km/h (8.1 mph). The longitudinal and lateral components of the delta-V were -13 km/h (-8.1 mph) and 2 km/h (1.2 mph), respectively. The severity of the corner impact was under-reported due to an impact configuration that involved the soft structure of the left fender

located outboard of the front bumper reinforcement. The Dodge's EDR recorded a maximum longitudinal acceleration of -42.2 g 22 ms after the frontal air bags were commanded to deploy. The SCI team conducted an analysis of the EDR-recorded longitudinal crash pulse and determined the longitudinal delta-V of the Dodge was tree impact 44.3 km/h (-27.5 mph).

The offset impact and the momentum of the vehicle induced a counterclockwise (CCW) rotation to the Dodge. The Dodge rotated 105 degrees CCW, during which the right rear wheel left a 1.7 m (5.6 ft) furrow in the grass. The vehicle traveled through a landscape bed prior to coming to rest on its wheels. The small plants and a miniature palm tree that the Dodge impacted with its right side on the path to final rest were not of sufficient size or root structure to cause additional damage to the right plane of the vehicle. The vehicle traveled 12.1 m (39.7 ft) from the impact with the tree to final rest and came to rest facing south on the north roadside.

Post-Crash

The owner of the home in front of which the crash occurred called the 9-1-1 emergency response system to report the crash. He then went to the vehicle to assist the driver. The homeowner and his son were the first to arrive at the vehicle and found the driver unconscious and laying face down across the center console with her head on the floor in front of the front right seat and her feet near the driver's seat back. They removed the driver and placed her on her back on the ground next to the vehicle, where she began to regain consciousness. The driver stated in the interview that she "blacked out" and did not have any recollection of the crash, but remembered regaining consciousness as she was being pulled from the vehicle. Police, emergency medical and tow personnel responded to the crash site. The driver of the Dodge sustained minor soft tissue injuries and was transported by ambulance to a local hospital where she was treated in the emergency department and released. The Dodge was towed from the scene due to disabling damage. It was transferred from the tow yard to a local body shop for evaluation. After the insurance company considered the Dodge a total loss, it was transferred to a regional vehicle salvage facility for auction, where it was inspected.

2008 Dodge Caliber

Exterior Damage

The right plane of the Dodge sustained minor sideswipe damage and the left aspect of the front plane sustained moderate damage as a result of this multiple impact crash sequence. On the right plane, the contact damage began 36 cm (14.2 in) aft of the right rear axle and extended forward 352 cm (138.6 in) to slightly forward of the right front wheel flare (**Figure 5**). The maximum crush was located 9 cm (3.5 in)

Figure 5: Initial impact sideswipe damage to the Dodge.

forward of the right front axle and measured 10 cm (3.9 in). A residual crush profile was documented along the full width of the right side damage at mid-door height, but included only minor surface scratches at the six C-locations. The six C measurements for the initial impact all equaled zero when free space was subtracted. The Collision Deformation Classification (CDC) for this impact was 12RDAS2.

The front left corner of the Dodge sustained moderate damage in this frontal offset crash **(Figure 6)**. The direct contact damage to the front plane began 50 cm (19.7 in) left of the vehicle's centerline at the left end of the bumper reinforcement. The direct contact damage extended left 28 cm (11 in) to the front left bumper corner and involved the soft structures and components of the left front fender. The combined direct and induced damage (Field L) extended along the full length of the front plane. The residual crush profile at the bumper elevation was as follows: C1 = 7 cm (2.8 in), C2 = 0 cm (0 in), C3 = 0 cm, C4 = 0 cm, C5 = 0 cm, C6 = 0 cm. Due to the nature of the corner impact, the residual crush profile was not representative of the severity of the crash. The damage resultant to the corner impact configuration wrapped around the left corner and extended 86 cm (33.9 in) rearward along the left plane to the A-pillar area (**Figure 7**). The left front suspension was directly involved in the impact. The windshield was completely fractured by the impact forces, with greater damage near the left A-pillar. The windshield was also fractured by the impact of the deploying passenger frontal air bag. There were no laminate tears in the windshield. The Event 2 impact resulted in induced buckling of the left half of the roof from the windshield header to the backlight header. The left front door glazing was disintegrated by the impact forces. All other glazing on the Dodge was undamaged. The left front door was opened by the property owner first on the scene post-crash, and would not close. The left rear and both right side doors remained closed and operational post-crash. The Collision Deformation Classification (CDC) assigned for this impact was 12FLEE5.

Figure 6: Front view of the damaged Dodge.

Figure 7: View of the direct damage along the Dodge's left side.

Event Data Recorder

The EDR of the Dodge was imaged at the time of the inspection through the use of the Bosh Crash Data Retrieval tool and software version 3.3. The CDR tool was connected directly to the Air bag Control Module (ACM) located under the center instrument panel. Twelve-volt electrical power was supplied externally. The recovered data indicated a deployment event was stored as the "Most Recent Event" in the module. The data indicated the Dodge was traveling 49 km/h (30 mph) 5 seconds prior to the deployment and that the vehicle steadily accelerated, with high RPM, to a speed of 62 km/h (39 mph) 0.1 second prior to the deployment. The EDR also recorded 250 milliseconds of high frequency longitudinal crash pulse data that was reported in 1 millisecond intervals. The crash pulse data was divided into 100 milliseconds of pre-deployment data and 149 milliseconds of post-deployment data. The data limitations section indicated that time zero (T0) was defined as the time of the deployment command. The EDR data was reanalyzed with version 3.5.1 of the software and is included as **Attachment A** at the end of this report.

Interior Damage

The interior of the Dodge sustained moderate-severity damage that was attributed to passenger compartment intrusion, occupant contact and air bag deployment. There was a scuff mark on the driver's sun visor attributed to the driver's head. This contact was located 6-17 cm (2.4-6.7 in) inboard of the left side of the visor, and 0-6 cm (0-2.4 in) forward of the rear edge of the visor. The driver's left knee loaded the lower left Instrument Panel (IP) through the deployed knee air bag, resulting in a scuff mark and deformation to the lower left IP located 14-28 cm (5.5-11 in) inboard of the left side of the IP and 0-18 cm (0-7.1 in) above its lower edge. The lid of the center console, forming the center armrest, was displaced to the right 5 cm (2 in) as a result of contact with the right side of the driver's abdomen. During the interior inspection, it was noted that a 16 cm (6.3 in) long wire related to upper glove compartment door had been displaced from its channel and protruded towards the front right seat. **Figure 8** depicts this wire spring. The steering wheel of the Dodge was turned to the 1 o'clock position at the time of the SCI inspection. The steering column shear capsule were inspected and found not to have moved. The longitudinal left toe pan intrusion measured 5 cm (2 in).

Figure 8: Left wire glove compartment door spring protruding from IP.

Manual Restraint Systems

The Dodge was equipped with 3-point lap and shoulder belts for the five designated seating positions. All belt systems utilized continuous loop webbing and sliding latch plates. The front belt systems also contained height adjustable D-rings, both of which were in the full-up position

at the time of the SCI inspection. The driver's belt retracted onto an Emergency Locking Retractor (ELR). The front safety belt systems utilized retractor pretensioners. The pretensioners actuated as a result of the tree impact. Inspection of the front belt systems revealed that the front safety belts were in the stowed position and the webbing was pulled against the B-pillars. The retractors were locked. These safety belts were not used at the time of the crash.

Frontal Air Bag System

The Dodge was equipped with a CAC frontal air bag system. The CAC system consisted of Low Risk Deployment dual-stage frontal air bags for the driver and right front passenger positions, seat track positioning sensors, front safety belt buckle switch sensors, and retractor pretensioners. The CAC system was designed such that it did not require a switch to suppress the front right air bag when the front right seat was unoccupied. The manufacturer of the Dodge had certified that the vehicle was compliant to the advanced air bag portion of Federal Motor Vehicle Safety Standard (FMVSS) 208.

The driver's air bag was concealed within the center hub of the four-spoke steering wheel by two cover flaps. The upper flap measured 15 cm (5.9 in) in width and 6 cm (2.4 in) in height. The lower flap was triangular in shape, measuring 14 cm (5.5 in) in width at the horizontal tear seam, 10 cm (3.9 in) in width at the lower aspect, and 7 cm (2.8 in) in height. The driver's air bag **(Figure 9)** measured 50 cm (19.7 in) in diameter in its deflated state. The air bag was vented by two circular vent ports located on the upper rear aspect of the air bag. The driver's air bag was tethered by two straps located at the 12 and 6 o'clock positions on a 15 cm (5.9 in) circular tether sewn to the center of the face of the air bag. There were three deployment transfer marks on the face of the air bag located in the lower left, upper left and upper right quadrants. No crash-related damage was present on the driver's air bag.

Figure 9: Driver's frontal air bag.

The front right air bag was mounted within the upper aspect of the right IP. The air bag module cover flaps measured 20 cm (7.9 in) in width. The upper flap measured 5 cm (2 in) and 6 cm (2.4 in) in height at the left and right sides, respectively. The lower flap was 6 cm (2.4 in) in height on the left and 5 cm (2 in) in height on the right side. The front right air bag was 46 cm (18.1 in) in height and 40 cm (15.7 in) in width in its deflated state. It was tethered by one strap sewn to the lower front of the air bag at the six o'clock position. The front right air bag was vented by four vent ports on the rear aspect of the air bag. The upper two ports were located at the 10 and 2 o'clock positions and were partially filled by a gathered section of the same material that formed the air bag. The lower two vents were open circular ports and were located at the 8 and 4 o'clock positions. The air bag did not contain crash related damage or occupant contacts,

but had been splashed during the crash sequence by a liquid from a bottle that was located in the cup holder of the Dodge.

The driver's knee air bag was mounted within the lower left instrument panel. The air bag deployed from an upward facing cover flap that was 36 cm (14.2 in) in width and 13 cm (5.1 in) in height. The air bag was rectangular in shape and was 52 cm (20.5 in) in width and 26 cm (10.2 in) in height in its deflated state. The knee air bag was tethered by a 13 cm (5.1 in) tether attached to the rear of the air bag 16 cm (6.3 in) from the top of the bag.

Due to the impact of the driver's left knee, the plastic cover for the knee bolster was deformed and exposed a supporting metal component located behind bolster cover. There was a 2 cm (0.8 in) cut in the rear aspect of the air bag, attributed to contact with the metal component. The cut in the air bag was located 15 cm (5.9 in) inboard of the left side of the air bag and 18 cm (7.1 in) below the top. There was no occupant contact evidence on the knee air bag. The knee air bag had been splashed by the same liquid as the front right passenger air bag.

Side Impact Air Bag System

The Dodge was equipped with roof side rail mounted IC air bags. The left IC air bag deployed during this crash sequence. The right IC did not deploy. The deployed left IC measured 160 cm (63 in) in length. At the front seating position, the IC was 41 cm (16.1 in) in height and 36 cm (14.2 in) in height at the rear seating position. Vertically, the left IC air bag extended 12 cm (4.7 in) below the belt line at the front and 9 cm (3.5 in) at the rear. The IC provided complete longitudinal coverage from the C-pillar to the B-pillar and covered the front right window opening with the exception of a void at the A-pillar measuring 23 cm (9.1 in) in width, 15 cm in height at the rear and 9 cm in height at the front. The IC was tethered to the A-pillar by a web strap 45 cm (17.7 in) in length, and to the D-pillar by a web strap 38 cm (15 in) in length. **Figure 10** depicts the left IC air bag. The air bag was labeled with the following nomenclature: *6082455A SI/PA 6.6*

Figure 10: Left IC air bag from the interior of the Dodge.

2008 Dodge Caliber Driver Demographics/Data

Driver Age/Sex:	30-year old/Female
Height:	168 cm (66 in)
Weight:	62 kg (136 lb)
Eyewear:	None
Seat Track Position:	Mid-track, 11 cm (4.3 in) forward of full-rear
Manual Safety Belt Use:	None
Usage Source:	Vehicle Inspection
Egress from Vehicle:	Pulled out of the vehicle by bystanders
Mode of Transport from Scene:	Ground ambulance
Type of Medical Treatment:	Transported to a local hospital emergency department, treated and released.

Driver Injuries

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
Contusion on top of head, above hairline	Minor (190402.1,5)	Left sun visor
Cervical strain	Minor (640278.1,6)	Indirect to the left sun visor
15 cm contusion on right side from ribs to hips	Minor (590402.1,1)	Center console
Right hip contusion	Minor (890402.1,1)	Center console
Bilateral knee abrasions, 8 cm each	Minor (890202.1,3)	Knee bolster
Bilateral lower leg contusions from knees to ~ 8 cm above ankles	Minor (890402.1,3)	Knee bolster
10 cm contusion to outside of left elbow	Minor (790402.1,2)	Left door panel- rear upper quadrant
5 cm abrasion to outside of left elbow	Minor (790202.1,2)	Left door panel- rear upper quadrant
Right wrist contusion	Minor (790402.1,1)	Floor

Source of Injury Data = Medical record and driver interview

Driver Kinematics

The 30-year-old female driver was seated in a mid-track position 11 cm (4.3 in) forward of full-rear. She was not using the vehicle's 3-point lap and shoulder belt system as evidenced by the actuation of the pretensioner with the safety belt in the stowed position. The driver of the Dodge

was at her residence and was arguing with her boyfriend prior to the crash. She decided to leave the residence, entered the vehicle and backed out of the gravel driveway onto the asphalt cul-de-sac. She shifted into drive and accelerated quickly, departing the roadway to the right after traveling approximately 18 m (59.1 ft).

The initial sideswipe impact with the trees and low landscape wall did not stop the vehicle or cause the driver to change position in the front left seat. She continued to accelerate, steered left and returned to the roadway. The vehicle crossed the center of the roadway and the driver overcorrected to the right departing the roadway to the right for a second time. The Dodge continued to accelerate after leaving the roadway. The driver stated in the interview that she "blacked out" and did not remember making any avoidance maneuver prior to impacting the large pine tree. The second off road tire marks were straight and the vehicle was not yawing.

The Dodge's offset frontal impact actuated the driver and front passenger retractor pretensioners and deployed the CAC frontal air bags, the driver's knee air bag, and the left IC air bag. In response to the impact force, the unrestrained driver initiated a forward trajectory within the front left seating position. The driver loaded the driver air bag with her torso and the driver's head impacted the roof at the sun visor, resulting in the contusion to her head. The driver's lower legs impacted the knee air bag and the left leg loaded through the air bag to the knee bolster, resulting in abrasions to both knees and contusions to both lower legs. The driver stated in the interview that she was wearing denim jeans, cotton socks and tennis shoes at the time of the crash.

The driver then initiated a rebound trajectory back into the driver's seat loading the seat back with her back. The driver's left flank contacted the door panel resulting in the abrasion and contusion to her left elbow. As the vehicle disengaged from the tree and began to rotate CCW, the unrestrained driver rebounded forward. The vehicle rotated around the driver placing the center console in her path. The driver loaded the top of the center console with her right hip and abdomen bending the top of the console. The contact resulted in the contusions to her right flank. The driver traveled over the center console and into the right front floor area impacting the floor with her right wrist. The driver came to rest with her upper body in the front right floor area, abdomen across the center console and her feet in the driver's seat.

The driver stated in the SCI interview that she had blacked out prior to the crash and remembers regaining consciousness as she was being pulled out of the vehicle by the owner of the property on which the crash occurred. The property owner stated in his interview that he found the driver in the position described above and pulled her from the vehicle after opening the front left door. The driver was transported by ground ambulance to a local hospital where she was treated in the emergency department and released.

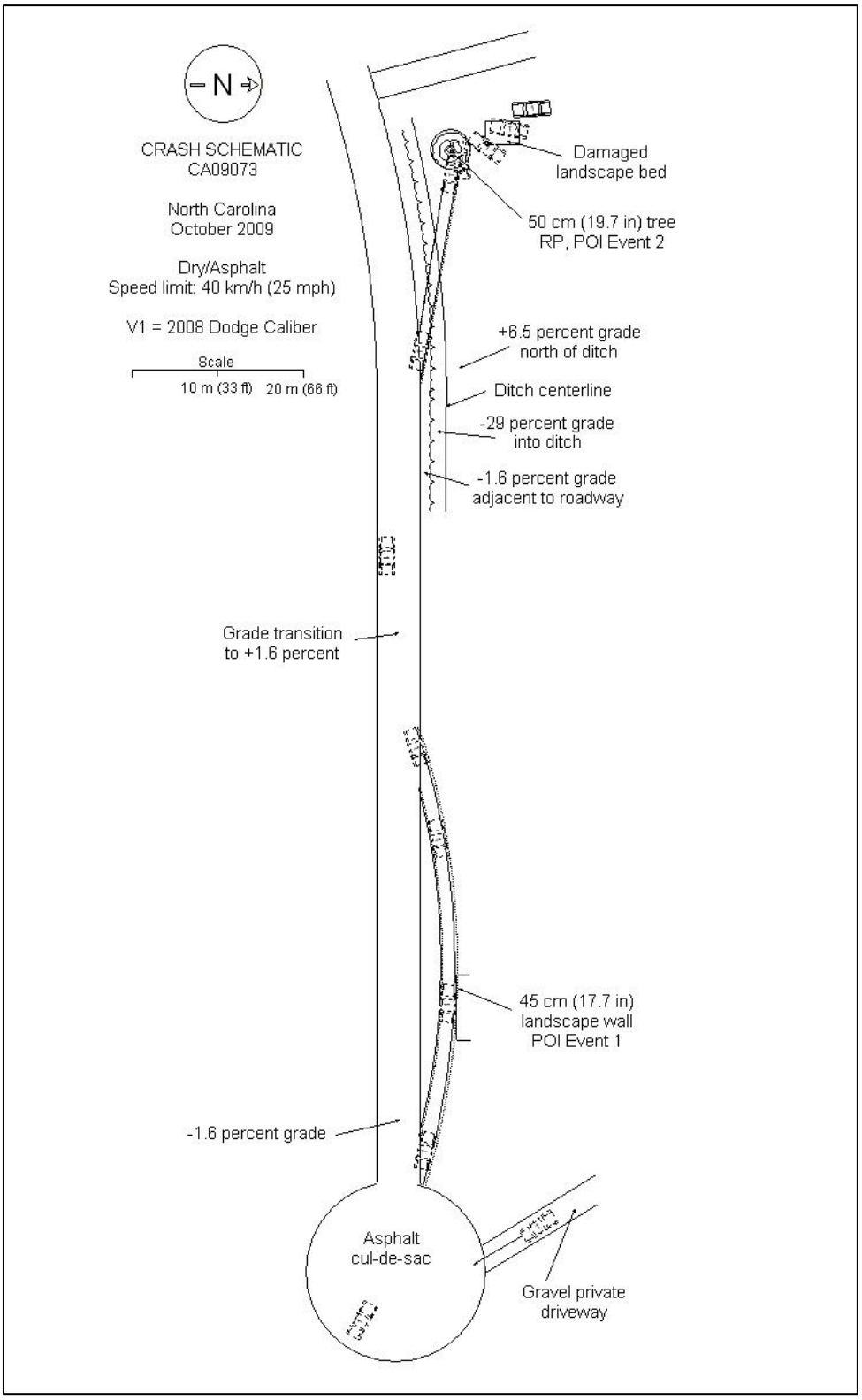


Figure 11: Scene Schematic

ATTACHMENT A:

2008 Dodge Caliber EDR Data

IMPORTANT NOTICE: Robert Bosch LLC and the manufacturers whose vehicles are accessible using the CDR System urge end users to use the latest production release of the Crash Data Retrieval system software when viewing, printing or exporting any retrieved data from within the CDR program. Using the latest version of the CDR software is the best way to ensure that retrieved data has been translated using the most current information provided by the manufacturers of the vehicles supported by this product.

CDR File Information

User Entered VIN	1B3HB28B68D******
User	
Case Number	CA09073
EDR Data Imaging Date	Tuesday, October 27 2009
Crash Date	Saturday, October 10 2009
Filename	CA09073 CDR.CDR
Saved on	Tuesday, October 27 2009 at 01:52:19 PM
Collected with CDR version	Crash Data Retrieval Tool 3.3
Reported with CDR version	Crash Data Retrieval Tool 3.5.1
EDR Device Type	airbag control module
Event(s) recovered	Most Recent Event

Comments

No comments entered.

Data Limitations

AIRBAG CONTROL MODULE (ACM) DATA LIMITATIONS:

GENERAL INFORMATION:

CAUTION: During Bench top imaging, make sure the ACM is not moved, tilted or turned over while connected to and powered by the CDR Interface Module. Also, after a CDR imaging process, wait 2 minutes after power is removed from the ACM before attempting to move the module. Not following these general ACM guidelines for bench top imaging could cause new events to be recorded in the ACM.

The ACM current fault status will be altered if the ACM is powered-up without having all of the other vehicle inputs connected (e.g., bench top imaging). This situation will occur when the CDR tool is connected directly to the ACM. This will not affect the stored fault data information in any of the Event Records. Always make a note in the CDR case comments section when an ACM bench top imaging process is being performed.

The recorded Deployment Event will contain Pre-Crash data.

- T0 (where '0' is subscript) (-.01 sec.) is defined as the last sample point in the vehicle data buffer when the ACM commanded a deployment for all vehicles except the 2008 - 2010 Dodge Grand Caravan, 2008-2010 Chrysler Town and Country and 2009-2010 Dodge Journey. In these vehicles, T0 (where '0' is subscript) is defined as the algorithm wakeup. Please note that the algorithm wakeup may be different for front, side, and roll-over events and their associated parameters.
- The VIN is captured by the ACM and then recorded as the Original VIN after 10 consecutive ignition cycles of capturing the same number. Once it has been recorded, this number can not be modified.

CDR FILE INFORMATION:

Event(s) Recovered definitions:

- None - There are no stored events in the Airbag Control Module (ACM)
- Not Retrievable - Event Data is stored in the ACM but is not retrievable by the CDR tool.
- For Continental ACMs:
  - Event Record 1 - Data from an event is stored in the ACM (not necessarily in chronological order)
  - Event Record 2 - Data from another event is stored in the ACM (not necessarily in chronological order)
  - Event Record 3 - Data from another event is stored in the ACM (not necessarily in chronological order)
- For all other ACMs:
  - Most Recent Event - Data of the most recent event is displayed in the report
  - 1st Prior Event - Two events are stored in the ACM, Data displayed is of the first prior event.
  - 2nd Prior Event - Three events are stored in the ACM, Data displayed is of the second prior event.
  - Etc., (for modules with 3 to 5 stored events)

CDR RECORD INFORMATION:

- If power to the ACM is lost during a deployment event, all or part of the event data record may not be recorded. Two scenarios may be recorded under this condition:
  - "None" may be displayed in the "Event(s) Recovered" section of the report indicating no pre-crash vehicle data.
  - An event may be displayed in the "Event(s) Recovered" section of the report and "Interrupted" will be displayed for Vehicle Event Recorder Status.
- The Airbag Control Module Configuration indicates the inputs and outputs that the ACM for a particular vehicle monitors and/or controls.
- "Event Number" in the System Status at Event section of the report:
  - Indicates the event number per vehicle ignition cycle for:
    - 2010 - 2011 Sebring, Avenger, Caliber, Nitro, Compass, Liberty, Patriot, Wrangler, and Ram
  - Indicates the overall order of the events for all other applicable vehicles.
- "Total Number of Events Recorded" in the System Status at Event section of the report:
  - Stops incrementing when each event record is recorded by the ACM for:
    - 2010 - 2011 Sebring, Avenger, Caliber, Nitro, Compass, Liberty, Patriot, Wrangler, and Ram
  - Indicates the total number of events that the ACM has recorded for all other applicable vehicles.
- Active Head Restraint (AHR) - This refers to the active head restraint systems that are electronically controlled by the ACM.
- For applicable vehicles, a "Yes" for a particular item in the Deployment Command Data section of the report indicates that the ACM commanded the deployment of the associated device. Note: For 2010 MY vehicles equipped with AHR, the AHR deployment will not be recorded in the EDR.
- Vehicle Data (Pre-Crash) is transmitted to the Airbag Control Module, by various vehicle control modules, via the vehicle's communication network.
- On 2006-2009 Ram 2500/3500, the Engine RPM recorded is limited to a maximum of 4080 RPM. On the 2008 - 2010 Dodge Grand Caravan, 2008-2010 Chrysler Town and Country and 2009-2010 Dodge Journey, the engine RPM resolution is 256 rpm. On all other vehicles, the resolution is 32 rpm.
- If a recorded event has Engine RPM equal to SNA and Speed, Vehicle Indicated equals SNA for each time stamp, then the data is default data and the event stored in the ACM is not valid.
  - The accuracy of the recorded Speed, Vehicle Indicated will be affected if the vehicle had the tire size or the final drive axle ratio changed from the factory build specifications.
  - Speed, Vehicle Indicated is reported as an average of the drive wheels.
- On the 2008 - 2010 Dodge Grand Caravan, 2008-2010 Chrysler Town and Country and 2009-2010 Dodge Journey, the vehicle speed resolution is 2 kph. On all other vehicles, the resolution is 1 kph.
- The MIL (Malfunction Indicator Lamp) Status for the various recorded systems indicates the state of the applicable malfunction indicator lamp at the time that the data was captured. Note: Some fault codes could be stored due to component/system damage from the accident.

NOTE: A StarScan Tool should be used to read any stored Diagnostic Trouble Codes (DTC's) in the various electronic modules (ACM, PCM, ABS, TCM, etc., where applicable) for use in interpretation of some vehicle specific recorded data.

VEHICLE DATA DEFINITIONS:

Vehicle Event Recorder Status definitions:

- For additional definitions, please refer to the CDR Help File Glossary
- ABS MIL (if equip.) - This indicates the ABS fault indicator lamp status. It will only be "On" when there is a fault in the ABS system. The Electronic brake module DTC's should be read and recorded for final system interpretation.
- ESP MIL (if equip.) - This indicates the ESP/BAS fault indicator lamp status. It will only be "On" when there is a fault or thermal model shutdown in the ESP system. The ESP module DTC's should be read and recorded for final system interpretation.
- ESP Lamp (if equip.) - This is the status of the ESP symbol - "car with squiggly lines" indicator lamp. "On" indicates ESP has been turned off by the driver or has reduced performance and is not an indication of a fault in the system.
- ESP Lamp Flashing Requested (if equip.) - If "Yes", then an ESP, Traction Control or Trailer Sway Control (if equipped) event was active at the time of data capture.
- ESP Disabled (if equip.)- "Yes" indicates that ABS & ESP have been disabled by the driver or due to system performance.
- Traction Control Button (if equip.)- When the button is "ON", (driver has pushed the button), the Traction Control system is "Disabled". When the button is "OFF", the Traction Control system is "Enabled".
- ESP Functional/Active (if equip.)- "YES" indicates that the ESP system is functional and has no faults.
- Panic Brake Assist Active (if equip.)- "Yes" indicates that all four of the brake circuits are under going ABS control.
- Steering Input (deg) (if equip.):
  - Steering Input polarity is positive for right turns on:
    - 2005 - 2007 Grand Cherokee
    - 2006 - 2007 Commander
    - 2005 - 2010 300, Magnum, and Charger
    - 2008 - 2010 Challenger
  - Steering Input polarity is negative for right turns on:
    - All other vehicles and model years not specified above
- Yaw Rate (deg/sec) (if equip.): All vehicles have negative yaw rate when making a right turn.
- ETC Lamp - Lamp "ON "indicates there is an active Electronic Throttle DTC.
- ETC Lamp Flashing - If "Yes", then the ETC is in the limp-in mode.
- Engine Torque Applied - If "No", then no engine torque output was applied (as in Park/Neutral for Automatic transmissions or clutch depressed on manual or during an ESP/Traction Control event). If "Yes", then engine torque output was applied.

- Tire 1 (2) Location (if equip.)- This indicates the location of the tire pressure sensor data. Default is used to indicate that the location of the tire pressure sensor is unknown or there is no tire pressure sensor in the wheel. Vehicles with Base Tire Pressure Monitoring systems will display SNA for both Tire Locations as these vehicles do not send actual pressure values across the communication bus.
- Tire 1 (2) Pressure Status (if equip.)- This indicates the actual pressure status of the Tire Location defined in the previous column. Possible values are LOW, NORMAL, HIGH, or SNA for this parameter. Vehicles with Base Tire Pressure Monitoring systems will display NORMAL even though these vehicles do not send actual pressure values across the communication bus.
- Tire 1 (2) Pressure (psi) (if equip.)- This indicates the actual tire pressure value of the Tire Location defined. Vehicles with Base Tire Pressure Monitoring systems will display N/A for this parameter as these vehicles do not send actual pressure values across the communication bus.
- Cruise Control System - "On" indicates that the Cruise Control system is turned on.
  Cruise Control Active - "Yes" indicates the Cruise Control system is actively controlling vehicle speed. "No" indicates the system is NOT controlling vehicle speed.
- (if equip.) - If a parameter name is followed by the words (if equip.), then the parameter is only valid for vehicles equipped the associated parameter/vehicle system.

APPLICATION INFORMATION:

- 2005 - 2009 Durango's equipped with side airbags have EDR data that can be imaged by the CDR tool. Durango's not equipped with side airbags have EDR Data that might be imaged by the CDR tool and can always be imaged by the supplier.
- For 2005 & 2006 MY, some Chrysler 300, Dodge Magnum, Dodge Charger, Jeep Grand Cherokee, and Jeep Commander models may contain EDR data that can not be imaged by the CDR tool.
- For 2006 & 2007 MY, some PT Cruiser models may contain EDR data that can not be imaged by the CDR tool.
- EDR Data is only recorded for frontal deployments in the following vehicles:
  - 2005-2007 Durango
  - 2006-2007 Ram 1500
  - 2006-2009 Ram 2500/3500 Heavy Duty
  - 2007 Aspen, Caliber, Compass, Patriot, Nitro, Sebring, Wrangler

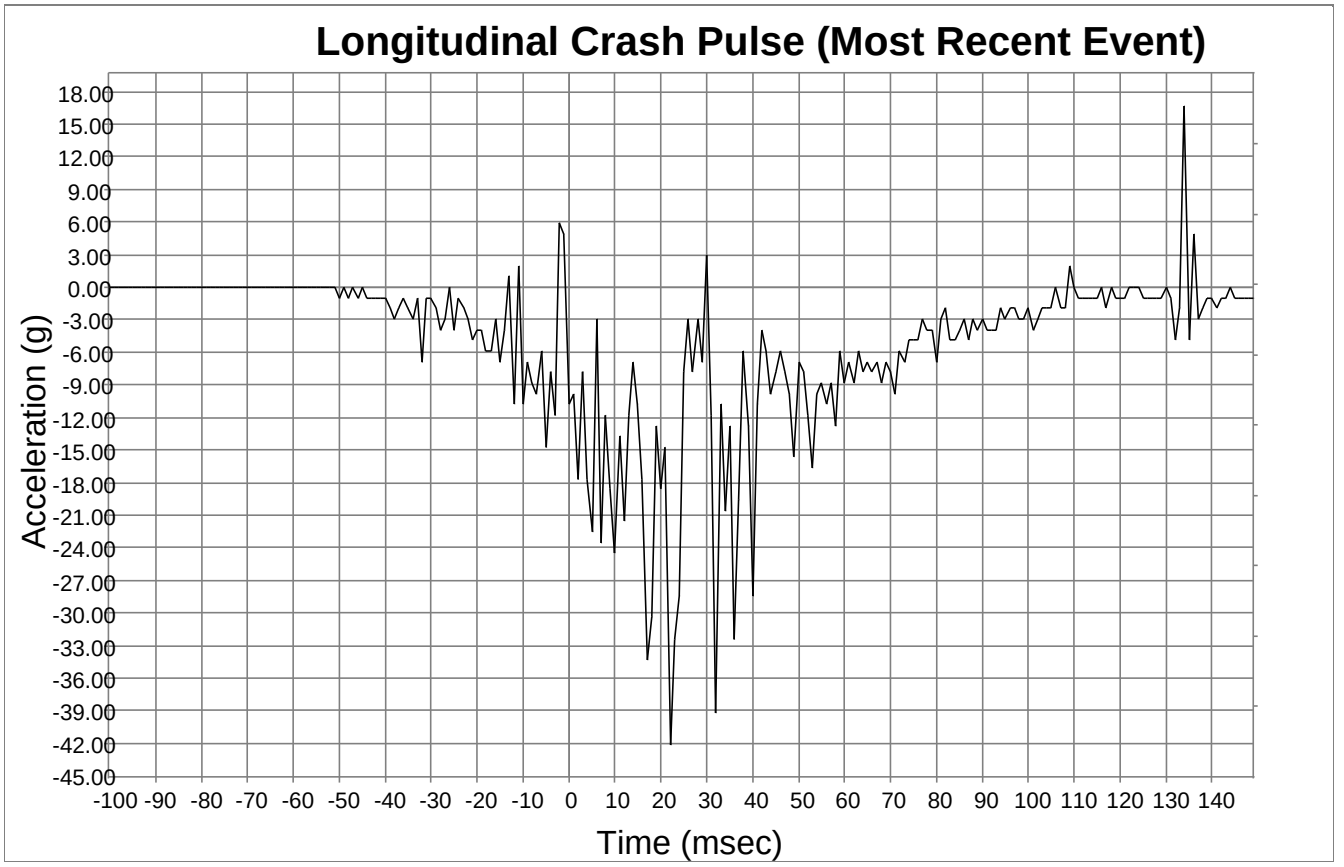
03001_Chrysler_r005

System Status at Retrieval

Original VIN	1B3HB28B68D******
Airbag Control Module Part Number	04896621AD
Airbag Control Module Serial Number	T2DME3467D0389
Airbag Control Module Supplier	TRW

System Configuration at Retrieval

Configured for Driver Seatbelt Switch	No
Configured for Front Center Seatbelt Switch	No
Configured for Front Passenger Seatbelt Switch	No
Configured for 2nd Row Left Seatbelt Switch	No
Configured for 2nd Row Center Seatbelt Switch	No
Configured for 2nd Row Right Seatbelt Switch	No
Configured for 3rd Row Left Seatbelt Switch	No
Configured for 3rd Row Center Seatbelt Switch	No
Configured for 3rd Row Right Seatbelt Switch	No
Configured for Driver Knee Airbag	Yes
Configured for Left Curtain #1	Yes
Configured for Right Curtain #1	Yes
Configured for Left Curtain #2	No
Configured for Right Curtain #2	No
Configured for Front Driver Seatbelt Pretensioner	Yes
Configured for Front Center Seatbelt Pretensioner	No
Configured for Front Passenger Seatbelt Pretensioner	Yes
Configured for 2nd Row Left Seatbelt Pretensioner	No
Configured for 2nd Row Center Seatbelt Pretensioner	No
Configured for 2nd Row Right Seatbelt Pretensioner	No
Configured for 3rd Row Left Seatbelt Pretensioner	No
Configured for 3rd Row Center Seatbelt Pretensioner	No
Configured for 3rd Row Right Seatbelt Pretensioner	No
Configured for Left Side Sensor #1	Yes
Configured for Left Side Sensor #2	Yes
Configured for Left Side Sensor #3	No
Configured for Right Side Sensor #1	Yes
Configured for Right Side Sensor #2	Yes
Configured for Right Side Sensor #3	No
Configured for Left Up Front Sensor	Yes
Configured for Right Up Front Sensor	Yes
Configured for Front Driver Digressive Load Limiter	No
Configured for Front Passenger Digressive Load Limiter	No
Configured for Driver Seat Track Position Sensor	Yes
Configured for Front Passenger Seat Track Position Sensor	Yes
Configured for Passenger Airbag Disable Switch	No
Configured for Front Passenger Occupant Classification System	No

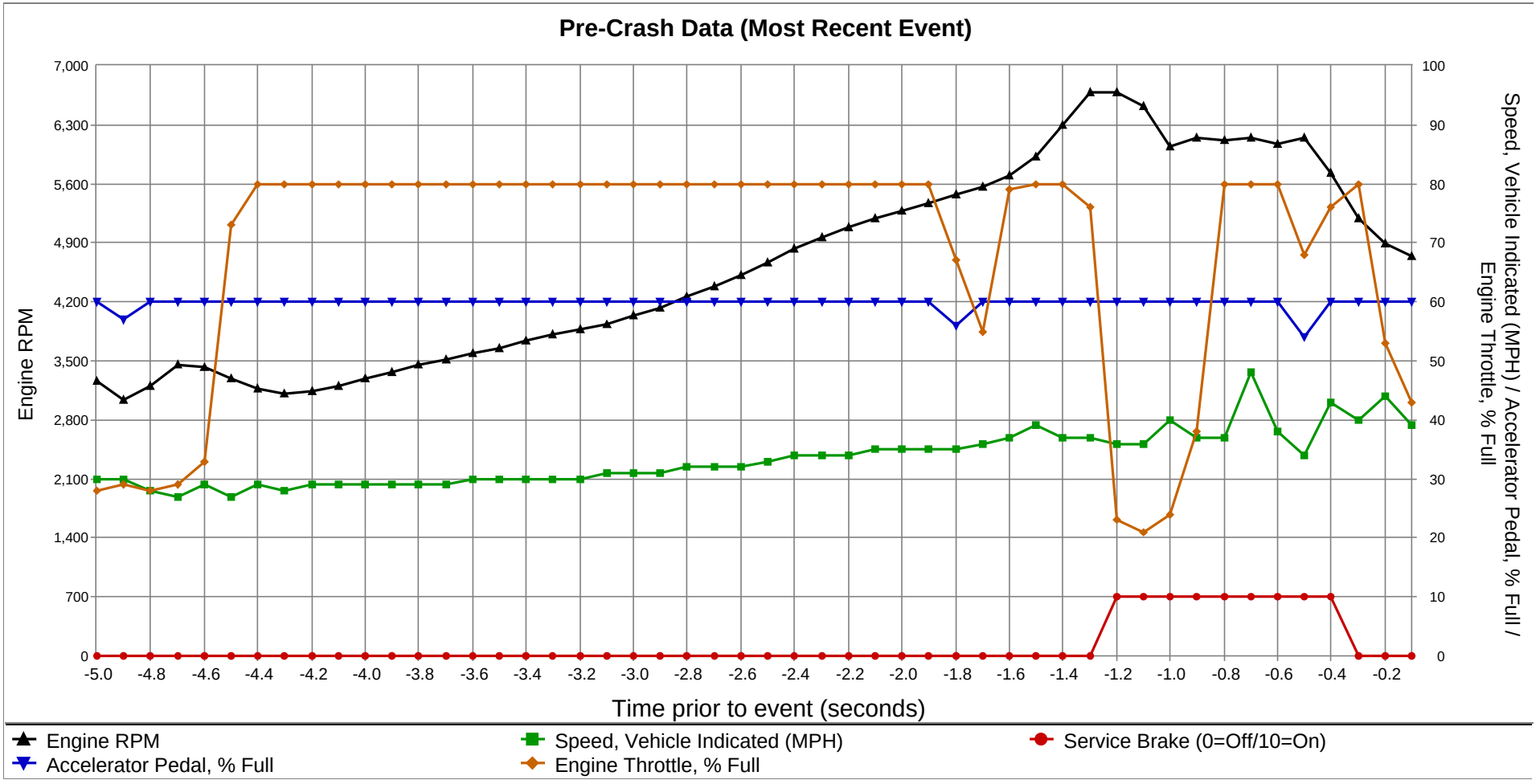

Longitudinal Crash Pulse (Most Recent Event)
Acceleration (g)
18.00
15.00
12.00
9.00
6.00
3.00
0.00
-3.00
-6.00
-9.00
-12.00
-15.00
-18.00
-21.00
-24.00
-27.00
-30.00
-33.00
-36.00
-39.00
-42.00
-45.00
-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140
Time (msec)

Longitudinal Crash Pulse (Most Recent Event)

Time (msec)	Longitudinal Acceleration (g)	Time (msec)	Longitudinal Acceleration (g)	Time (msec)	Longitudinal Acceleration (g)
-100	0.00	-50	-0.98	0	-10.78
-99	0.00	-49	0.00	1	-9.80
-98	0.00	-48	-0.98	2	-17.65
-97	0.00	-47	0.00	3	-7.84
-96	0.00	-46	-0.98	4	-17.65
-95	0.00	-45	0.00	5	-22.55
-94	0.00	-44	-0.98	6	-2.94
-93	0.00	-43	-0.98	7	-23.53
-92	0.00	-42	-0.98	8	-11.76
-91	0.00	-41	-0.98	9	-18.63
-90	0.00	-40	-0.98	10	-24.51
-89	0.00	-39	-1.96	11	-13.73
-88	0.00	-38	-2.94	12	-21.57
-87	0.00	-37	-1.96	13	-11.76
-86	0.00	-36	-0.98	14	-6.86
-85	0.00	-35	-1.96	15	-10.78
-84	0.00	-34	-2.94	16	-17.65
-83	0.00	-33	-0.98	17	-34.31
-82	0.00	-32	-6.86	18	-30.39
-81	0.00	-31	-0.98	19	-12.75
-80	0.00	-30	-0.98	20	-18.63
-79	0.00	-29	-1.96	21	-14.71
-78	0.00	-28	-3.92	22	-42.16
-77	0.00	-27	-2.94	23	-32.35
-76	0.00	-26	0.00	24	-28.43
-75	0.00	-25	-3.92	25	-7.84
-74	0.00	-24	-0.98	26	-2.94
-73	0.00	-23	-1.96	27	-7.84
-72	0.00	-22	-2.94	28	-2.94
-71	0.00	-21	-4.90	29	-6.86
-70	0.00	-20	-3.92	30	2.94
-69	0.00	-19	-3.92	31	-11.76
-68	0.00	-18	-5.88	32	-39.22
-67	0.00	-17	-5.88	33	-10.78
-66	0.00	-16	-2.94	34	-20.59
-65	0.00	-15	-6.86	35	-12.75
-64	0.00	-14	-3.92	36	-32.35
-63	0.00	-13	0.98	37	-19.61
-62	0.00	-12	-10.78	38	-5.88
-61	0.00	-11	1.96	39	-12.75
-60	0.00	-10	-10.78	40	-28.43
-59	0.00	-9	-6.86	41	-10.78
-58	0.00	-8	-8.82	42	-3.92
-57	0.00	-7	-9.80	43	-5.88
-56	0.00	-6	-5.88	44	-9.80
-55	0.00	-5	-14.71	45	-7.84
-54	0.00	-4	-7.84	46	-5.88
-53	0.00	-3	-11.76	47	-7.84
-52	0.00	-2	5.88	48	-9.80
-51	0.00	-1	4.90	49	-15.69

Longitudinal Crash Pulse (Most Recent Event)

Time (msec)	Longitudinal Acceleration (g)	Time (msec)	Longitudinal Acceleration (g)
50	-6.86	100	-1.96
51	-7.84	101	-3.92
52	-11.76	102	-2.94
53	-16.67	103	-1.96
54	-9.80	104	-1.96
55	-8.82	105	-1.96
56	-10.78	106	0.00
57	-8.82	107	-1.96
58	-12.75	108	-1.96
59	-5.88	109	1.96
60	-8.82	110	0.00
61	-6.86	111	-0.98
62	-8.82	112	-0.98
63	-5.88	113	-0.98
64	-7.84	114	-0.98
65	-6.86	115	-0.98
66	-7.84	116	0.00
67	-6.86	117	-1.96
68	-8.82	118	0.00
69	-6.86	119	-0.98
70	-7.84	120	-0.98
71	-9.80	121	-0.98
72	-5.88	122	0.00
73	-6.86	123	0.00
74	-4.90	124	0.00
75	-4.90	125	-0.98
76	-4.90	126	-0.98
77	-2.94	127	-0.98
78	-3.92	128	-0.98
79	-3.92	129	-0.98
80	-6.86	130	0.00
81	-2.94	131	-0.98
82	-1.96	132	-4.90
83	-4.90	133	-1.96
84	-4.90	134	16.67
85	-3.92	135	-4.90
86	-2.94	136	4.90
87	-4.90	137	-2.94
88	-2.94	138	-1.96
89	-3.92	139	-0.98
90	-2.94	140	-0.98
91	-3.92	141	-1.96
92	-3.92	142	-0.98
93	-3.92	143	-0.98
94	-1.96	144	0.00
95	-2.94	145	-0.98
96	-1.96	146	-0.98
97	-1.96	147	-0.98
98	-2.94	148	-0.98
99	-2.94	149	-0.98


Pre-Crash Data (Most Recent Event)
Engine RPM
7,000
6,300
5,600
4,900
4,200
3,500
2,800
2,100
1,400
700
0
Speed, Vehicle Indicated (MPH) / Accelerator Pedal, % Full / Engine Throttle, % Full
100
90
80
70
60
50
40
30
20
10
0
-5.0 -4.8 -4.6 -4.4 -4.2 -4.0 -3.8 -3.6 -3.4 -3.2 -3.0 -2.8 -2.6 -2.4 -2.2 -2.0 -1.8 -1.6 -1.4 -1.2 -1.0 -0.8 -0.6 -0.4 -0.2
Time prior to event (seconds)
Engine RPM
Accelerator Pedal, % Full
Speed, Vehicle Indicated (MPH)
Engine Throttle, % Full
Service Brake (0=Off/10=On)

Pre-Crash Data (Most Recent Event - table 1 of 3)

(the most recent sampled values are recorded prior to the event)

Time Stamp (sec)	Vehicle Event Recorder Status	Engine RPM	Speed, Vehicle Indicated (MPH [km/h])	Engine Throttle, % Full	Accelerator Pedal, % Full	Raw Manifold Pressure (kPa)	Service Brake	Brake Switch #2 Status
-5.0	Complete	3,264	30 [49]	28.3	59.8	91	Off	Open
-4.9	Complete	3,040	30 [48]	28.7	57.5	93	Off	Open
-4.8	Complete	3,200	28 [45]	28.3	59.8	93	Off	Open
-4.7	Complete	3,456	27 [44]	29.1	59.8	92	Off	Open
-4.6	Complete	3,424	29 [47]	32.7	59.8	93	Off	Open
-4.5	Complete	3,296	27 [44]	72.8	59.8	99	Off	Open
-4.4	Complete	3,168	29 [46]	80.3	59.8	99	Off	Open
-4.3	Complete	3,104	28 [45]	80.3	59.8	100	Off	Open
-4.2	Complete	3,136	29 [46]	80.3	59.8	100	Off	Open
-4.1	Complete	3,200	29 [46]	80.3	59.8	99	Off	Open
-4.0	Complete	3,296	29 [46]	80.3	59.8	99	Off	Open
-3.9	Complete	3,360	29 [46]	80.3	59.8	99	Off	Open
-3.8	Complete	3,456	29 [47]	80.3	59.8	99	Off	Open
-3.7	Complete	3,520	29 [47]	80.3	59.8	99	Off	Open
-3.6	Complete	3,584	30 [48]	80.3	59.8	99	Off	Open
-3.5	Complete	3,648	30 [48]	80.3	59.8	98	Off	Open
-3.4	Complete	3,744	30 [49]	80.3	59.8	99	Off	Open
-3.3	Complete	3,808	30 [49]	80.3	59.8	99	Off	Open
-3.2	Complete	3,872	30 [49]	80.3	59.8	99	Off	Open
-3.1	Complete	3,936	31 [50]	80.3	59.8	98	Off	Open
-3.0	Complete	4,032	31 [50]	80.3	59.8	98	Off	Open
-2.9	Complete	4,128	31 [50]	80.3	59.8	98	Off	Open
-2.8	Complete	4,256	32 [51]	80.3	59.8	98	Off	Open
-2.7	Complete	4,384	32 [51]	80.3	59.8	98	Off	Open
-2.6	Complete	4,512	32 [52]	80.3	59.8	98	Off	Open
-2.5	Complete	4,672	33 [53]	80.3	59.8	98	Off	Open
-2.4	Complete	4,832	34 [54]	80.3	59.8	98	Off	Open
-2.3	Complete	4,960	34 [54]	80.3	59.8	98	Off	Open
-2.2	Complete	5,088	34 [55]	80.3	59.8	97	Off	Open
-2.1	Complete	5,184	35 [56]	80.3	59.8	98	Off	Open
-2.0	Complete	5,280	35 [56]	80.3	59.8	97	Off	Open
-1.9	Complete	5,376	35 [57]	80.3	59.8	98	Off	Open
-1.8	Complete	5,472	35 [57]	66.5	56.3	96	Off	Open
-1.7	Complete	5,568	36 [58]	55.1	59.8	96	Off	Open
-1.6	Complete	5,696	37 [60]	78.7	59.8	97	Off	Open
-1.5	Complete	5,920	39 [62]	80.3	59.8	97	Off	Open
-1.4	Complete	6,304	37 [59]	80.3	59.8	97	Off	Open
-1.3	Complete	6,688	37 [59]	76.4	59.8	95	Off	Open
-1.2	Complete	6,688	36 [58]	23.2	59.8	72	On	Open
-1.1	Complete	6,528	36 [58]	21.3	59.8	50	On	Closed
-1.0	Complete	6,048	40 [64]	23.6	59.8	53	On	Closed
-0.9	Complete	6,144	37 [59]	37.8	59.8	69	On	Closed
-0.8	Complete	6,112	37 [60]	79.5	59.8	95	On	Closed
-0.7	Complete	6,144	48 [77]	80.3	59.8	96	On	Closed
-0.6	Complete	6,080	38 [61]	80.3	59.8	95	On	Open
-0.5	Complete	6,144	34 [55]	67.7	54.3	95	On	Closed
-0.4	Complete	5,728	43 [69]	75.6	59.8	96	On	Closed
-0.3	Complete	5,184	40 [65]	80.3	59.8	96	Off	Open
-0.2	Complete	4,896	44 [71]	52.8	59.8	96	Off	Open
-0.1	Complete	4,736	39 [62]	42.9	59.8	94	Off	Open

Pre-Crash Data (Most Recent Event - table 2 of 3)

(the most recent sampled values are recorded prior to the event)

Time Stamp (sec)	ABS MIL (if equip.)	ESP MIL (if equip.)	ESP Lamp (if equip.)	ESP Lamp Flashing Requested (if equip.)	ESP Functional (if equip.)
-5.0	Off	Off	Off	No	No
-4.9	Off	Off	Off	No	No
-4.8	Off	Off	Off	No	No
-4.7	Off	Off	Off	No	No
-4.6	Off	Off	Off	No	No
-4.5	Off	Off	Off	No	No
-4.4	Off	Off	Off	No	No
-4.3	Off	Off	Off	No	No
-4.2	Off	Off	Off	No	No
-4.1	Off	Off	Off	No	No
-4.0	Off	Off	Off	No	No
-3.9	Off	Off	Off	No	No
-3.8	Off	Off	Off	No	No
-3.7	Off	Off	Off	No	No
-3.6	Off	Off	Off	No	No
-3.5	Off	Off	Off	No	No
-3.4	Off	Off	Off	No	No
-3.3	Off	Off	Off	No	No
-3.2	Off	Off	Off	No	No
-3.1	Off	Off	Off	No	No
-3.0	Off	Off	Off	No	No
-2.9	Off	Off	Off	No	No
-2.8	Off	Off	Off	No	No
-2.7	Off	Off	Off	No	No
-2.6	Off	Off	Off	No	No
-2.5	Off	Off	Off	No	No
-2.4	Off	Off	Off	No	No
-2.3	Off	Off	Off	No	No
-2.2	Off	Off	Off	No	No
-2.1	Off	Off	Off	No	No
-2.0	Off	Off	Off	No	No
-1.9	Off	Off	Off	No	No
-1.8	Off	Off	Off	No	No
-1.7	Off	Off	Off	No	No
-1.6	Off	Off	Off	No	No
-1.5	Off	Off	Off	No	No
-1.4	Off	Off	Off	No	No
-1.3	Off	Off	Off	No	No
-1.2	Off	Off	Off	No	No
-1.1	Off	Off	Off	No	No
-1.0	Off	Off	Off	No	No
-0.9	Off	Off	Off	No	No
-0.8	Off	Off	Off	No	No
-0.7	Off	Off	Off	No	No
-0.6	Off	Off	Off	No	No
-0.5	Off	Off	Off	No	No
-0.4	Off	Off	Off	No	No
-0.3	Off	Off	Off	No	No
-0.2	Off	Off	Off	No	No
-0.1	Off	Off	Off	No	No

Pre-Crash Data (Most Recent Event - table 3 of 3)

(the most recent sampled values are recorded prior to the event)

Time Stamp (sec)	ETC Lamp (if equip.)	ETC Lamp Flashing (if equip.)	Engine Torque Applied	Cruise Control System	Cruise Control Active
-5.0	Off	No	Yes	On	No
-4.9	Off	No	Yes	On	No
-4.8	Off	No	Yes	On	No
-4.7	Off	No	Yes	On	No
-4.6	Off	No	Yes	On	No
-4.5	Off	No	Yes	On	No
-4.4	Off	No	Yes	On	No
-4.3	Off	No	Yes	On	No
-4.2	Off	No	Yes	On	No
-4.1	Off	No	Yes	On	No
-4.0	Off	No	Yes	On	No
-3.9	Off	No	Yes	On	No
-3.8	Off	No	Yes	On	No
-3.7	Off	No	Yes	On	No
-3.6	Off	No	Yes	On	No
-3.5	Off	No	Yes	On	No
-3.4	Off	No	Yes	On	No
-3.3	Off	No	Yes	On	No
-3.2	Off	No	Yes	On	No
-3.1	Off	No	Yes	On	No
-3.0	Off	No	Yes	On	No
-2.9	Off	No	Yes	On	No
-2.8	Off	No	Yes	On	No
-2.7	Off	No	Yes	On	No
-2.6	Off	No	Yes	On	No
-2.5	Off	No	Yes	On	No
-2.4	Off	No	Yes	On	No
-2.3	Off	No	Yes	On	No
-2.2	Off	No	Yes	On	No
-2.1	Off	No	Yes	On	No
-2.0	Off	No	Yes	On	No
-1.9	Off	No	Yes	On	No
-1.8	Off	No	Yes	On	No
-1.7	Off	No	Yes	On	No
-1.6	Off	No	Yes	Off	No
-1.5	Off	No	Yes	Off	No
-1.4	Off	No	Yes	Off	No
-1.3	Off	No	Yes	Off	No
-1.2	Off	No	Yes	Off	No
-1.1	Off	No	Yes	On	No
-1.0	Off	No	Yes	On	No
-0.9	Off	No	Yes	On	No
-0.8	Off	No	Yes	On	No
-0.7	Off	No	Yes	On	No
-0.6	Off	No	Yes	On	No
-0.5	Off	No	Yes	On	No
-0.4	Off	No	Yes	On	No
-0.3	Off	No	Yes	On	No
-0.2	Off	No	Yes	On	No
-0.1	Off	No	Yes	On	No