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Special Crash Investigations: On-Site Reported Unintended Acceleration Crash Investigation; Vehicle: 2011 Jeep Liberty; Location: New York; Crash Date: April 2016

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15. Supplementary Notes

Each crash represents a unique sequence of events and generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicles or their safety systems. This report and associated case data are based on information available to the Special Crash Investigation team on the date this report was published.

16. Abstract

This report documents the on-site investigation of a crash involving a 2011 Jeep Liberty that occurred in the parking lot of a commercial facility. The unbelted 51-year-old female driver claimed that after she entered the Jeep, it unexpectedly accelerated forward as she shifted the vehicle's transmission into Drive. As the Jeep accelerated from a stopped position, the unbelted driver attempted to steer the vehicle away from other vehicles on an arcing trajectory to the left. The Jeep first struck the right rear of another unknown year Jeep Liberty and then struck the concrete wall of a commercial building, resulting in the deployment of the Jeep's frontal air bag system. The driver was transported by ambulance to a local hospital, where she was treated and released. No police crash report (PCR) was filed because the incident occurred on private property and law enforcement was not contacted.

Through the course of this investigation, the SCI investigator ultimately concluded that the driver mistakenly applied the accelerator instead of the brake, which resulted in the vehicle's errant acceleration and subsequent crash.

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Table Of Contents

Special Crash Investigations
On-Site Reported Unintended Acceleration Crash Investigation
Case No: CR18012
Office Of Defects Investigation
Vehicle: 2011 Jeep Liberty
Location: New York
Crash Date: April 2016

Background

This report documents the on-site investigation of a crash involving a 2011 Jeep Liberty (Figure 1) that occurred in the parking lot of a commercial facility. The unbelted 51-year-old female driver claimed that when she entered the Jeep, it unexpectedly accelerated forward as she shifted the vehicle's transmission into Drive. As the Jeep accelerated from a stopped position, the unbelted driver attempted to steer the vehicle away from other vehicles on an arcing trajectory to the left. The Jeep first struck the right rear of another Jeep Liberty (model year unknown) and then struck the concrete wall of a commercial building, resulting in the deployment of the Jeep's frontal air bag system. The driver was transported by ambulance to a local hospital, where she was treated and released. No police crash report (PCR) was filed because the incident occurred on private property and law enforcement was not contacted.

Figure 1. Right front oblique view of the involved 2011 Jeep Liberty

The National Highway Traffic Safety Administration was notified of the crash by the vehicle's driver in April 2018. The notification was forwarded to the Special Crash Investigations (SCI) group and assigned for on-site investigation by the SCI team at Crash Research & Analysis, Inc., in May 2018. Cooperation was established with the vehicle's corporate owner to inspect the vehicle and commercial facility where the crash occurred. The on-site SCI investigation consisted of an inspection of the Jeep to document its exterior and interior damage, identify points of occupant contact, assess the manual and supplemental restraint systems, and inspect the vehicle's accelerator pedal and throttle control systems. Data was imaged from the event data recorder (EDR) of the Jeep's occupant restraints controller (ORC) by the SCI investigator using the Bosch Crash Data Retrieval (CDR) tool. A technical representative from Fiat Chrysler America attended the SCI inspection and imaged data from the vehicle's systems using a proprietary scan tool. The retrieved data was then shared with the SCI investigator at a later date.

Further SCI activities included the inspection and documentation of the crash site. A telephone interview of the driver was conducted and video footage of the crash that was recorded by a surveillance camera located in the parking lot of the facility was reviewed.

The SCI vehicle inspection revealed that the throttle operated smoothly and within normal limits. The foot controls were not impeded or restricted by the floor mats, carpet, or any other objects. However, data imaged from the vehicle by the manufacturer representative and shared with the SCI investigator indicated that there was an ongoing diagnostic trouble code (DTC) defined as "Brake Pedal Switch 1 / 2 Stuck."[1] This prevented proper functionality of the Jeep's electronic brake transmission shift interlock (BTSI), and let the driver shift the vehicle's transmission without direct application of the brake pedal. The pre-crash data imaged from the EDR indicated that the driver applied the accelerator pedal in an increasing manner up to 100 percent and shifted the vehicle from park into neutral, and then from neutral into drive. After this investigation, the SCI investigator ultimately concluded that the driver mistakenly applied the accelerator pedal instead of the brake pedal, which resulted in the vehicle's errant acceleration and subsequent crash.

[1] Bosch Diagnostics: *Diagnostic Code Lookup*. www.boschdiagnostics.com/diy/code-lookup

Crash Summary

Crash Site

The crash occurred in the parking lot of a private commercial facility located in an urban area in the morning in April 2016. According to the national weather service, conditions in the locale at the time of the crash included clear skies with a temperature of 12 °C (53 °F), a northerly breeze of 11 km/h (7 mph), and relative humidity of 50 percent. The physical environment of the parking lot area was documented during the SCI crash site inspection using photographs and a Nikon Nivo 5.M+ total station mapping system.

The parking lot area was asphalt surfaced, and surrounded a building approximately 107 m (350 ft) long by 24 m (80 ft) wide. The building was oriented north-south, and had numerous large overhead doors along its east-facing side. Near the north end of the building, a 3.7 m (12.0 ft) wide overhead door was centered 3.8 m (12.6 ft) south of the building's north end. A video surveillance camera was located above and to the north of this overhead door (Figure 2).

Figure 2. West-facing view of the building, overhead door, and security camera (highlighted by yellow circle)

The width of the parking lot on the east side of the building measured 21 m (69 ft). A dumpster was located at a 45-degree angle, centered 21.3 m (70.0 ft) east of the building and 22.6 m (74.1 ft) south of the building's north end (Figure 3). A crash diagram is included at the end of this report.

Figure 3. North-facing view of the parking lot area on the east side of the building

Pre-Crash

The 51-year-old female driver was an employee of the commercial facility. She was using the Jeep during the course of her employment. Prior to the crash, the driver had arrived at the facility and began her workday. She drove the Jeep through the parking lot and parked in close proximity to a trash dumpster, such that she could dispose of refuse that had accumulated in the vehicle by other employees. The surveillance video reviewed by the SCI investigator showed the driver walk over to the dumpster and dispose of several items. Figure 4 shows a screen capture of the surveillance video that shows the parked Jeep and the dumpster.

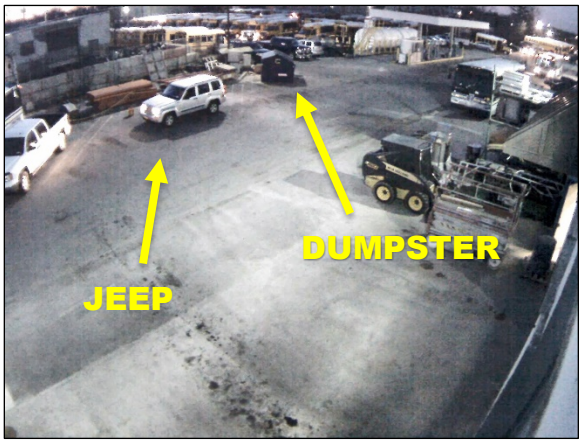


Figure 4. East-facing view of the private property parking lot and involved Jeep stopped near the dumpster (screen capture from video surveillance footage)

As the driver returned to her vehicle, another unknown model year Jeep Liberty approached her and stopped. The female driver then engaged in a brief conversation with the other vehicle's driver (Figure 5). She returned to her Jeep as the other vehicle began to pull away. The driver entered the Jeep, and it abruptly accelerated from its stopped position toward the north. Due to the combination of the orientation of its front wheels when it was stopped and a left input by the driver, the Jeep steered to the left in an arcing path while it accelerated forward. The SCI investigator noted that there was no definitive view of the Jeep's brake lights in the video surveillance footage.

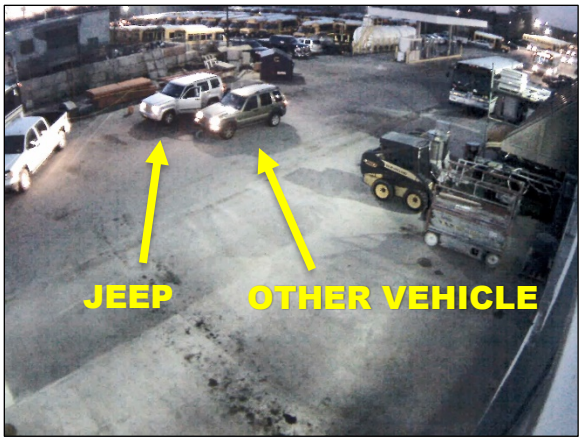


Figure 5. East-facing view of the Jeep and the other vehicle that stopped to have a conversation with the Jeep's driver (screen capture from video surveillance footage)

Crash

The first crash event (Event 1) occurred as the front of the Jeep struck the rear of the other vehicle. This contact produced minor body surface damage to the Jeep's front plane, with no visible deformation. It maintained its arcing travel path and then struck the concrete wall of the building, beneath the surveillance camera (Event 2).

Figure 6 shows a screen capture of the surveillance video that shows the Jeep and other vehicle at impact (Event 1). Figure 7 shows a screen capture of the surveillance video that shows the Jeep at impact with the building's concrete exterior wall. Following impact with the building, the Jeep came to rest with its front plane engaged against the north corner of the overhead door opening.

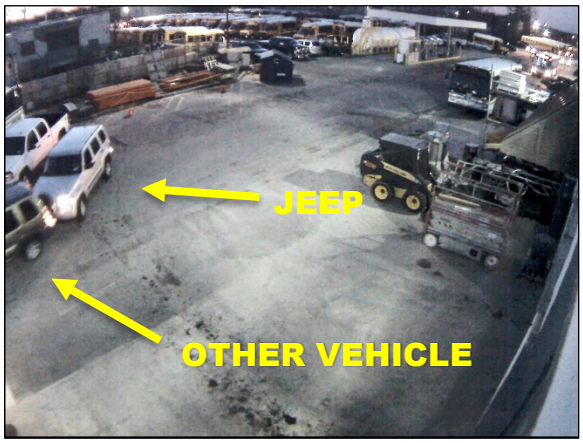


Figure 6. East-facing view of the Jeep during its impact/engagement with the other vehicle (screen capture from video surveillance footage)

Figure 7. East-facing view of the Jeep during its impact/engagement with the building (screen capture from video surveillance footage)

Post-Crash

The driver exited the Jeep immediately following the crash without assistance. In the surveillance video footage, the driver was seen walking away from the Jeep to the southeast as she held her forehead with her left hand and rubbed her right knee with her right hand. She stopped approximately 6.5 m (21.0 ft) east of the building and stood stationary, then clutched her forehead with both hands as she looked around in varying directions. Several employees at the facility heard the crash and ran to see what had occurred. They comforted the driver, while at least two others went over to the Jeep. One later reported to the fleet manager that the Jeep's engine was running in an idle mode, and they turned the ignition to the "off" position.

Because the crash occurred on private property, and the fact that the Jeep had a corporate owner, police were not notified of the crash. An ambulance was summoned to the facility and transported the driver to a local hospital. She was evaluated, treated, and released on the same day as the crash. The Jeep remained in the possession of its commercial fleet owner and transferred to a storage lot at the facility. It remained in storage at the time of the inspection.

2011 Jeep Liberty

Description

The Jeep was manufactured in August 2010 and was identified by the Vehicle Identification Number 1J4PN2GK1BWxxxxxx. It was a 4-door SUV built on a 269 cm (106.0 in) wheelbase with a 3.7-liter, V-6 gasoline engine. The Jeep's electronic odometer reading at the time of the SCI inspection was 168,178 km (104,501 mi).

The Jeep (Figure 8) had a gross vehicle weight rating of 2,541 kg (5,600 lb). Front and rear axle ratings were 1,248 kg (2,750 lb) and 1,452 kg (3,200 lb). The curb weight was 1,936 kg (4,269 lb). Placarding on the frame of the left front door declared that the vehicle manufacturer's recommended tire size and cold tire pressure for all four axle positions was P225/75R16 at 228 kPa (33 psi). At the time of the SCI inspection, the vehicle had Goodyear Wrangler ST tires of the recommended size at all four axle positions. All tires had ample tread, and remained inflated without damage or restriction. Matching Tire Identification Numbers (TINs) were "M671 EYER."

Figure 8. Front left oblique view of the 2011 Jeep Liberty at the time of the SCI vehicle inspection

The Jeep had seating of up to five occupants (2/3). The front row consisted of bucket seats with adjustable head restraints. At the time of the SCI inspection, the driver's seat was adjusted to its rearmost track position, with the seat back slightly reclined and the adjustable head restraint 9 cm (3.5 in) upward. The Jeep's second row had a non-adjustable bench seat for three occupants. The second-row seat backs were folded down into the cargo position at the time of the SCI inspection. Manual safety features included 3-point lap and shoulder safety belts for all five seat positions. The front safety belts had retractor pretensioners. The Jeep was further equipped with supplemental restraint systems that consisted of a Certified Advanced 208-Compliant (CAC) frontal air bag system and dual-sensing side impact and rollover inflatable curtain (IC) air bags mounted in the roof side rails.

Exterior Damage

Damage to the exterior of the Jeep was located on the front plane, associative to the respective frontal impacts with the back plane of the other vehicle and the concrete building. Based on a review of the video surveillance footage, there was no significant deformation to the front plane of the Jeep associative to the first impact event with the back plane of the other vehicle. The

collision deformation classification (CDC) assigned to the Jeep for the Event 1 impact was 12FREW1. No WinSMASH calculations could be performed because the residual deformation pattern (if any) was overlapped by the subsequent impact.

The second impact event with the concrete wall of the building produced direct contact damage on the front plane of the Jeep that began 5 cm (2.0 in) right of centerline and extended 73 cm (28.7 in) to the right front bumper corner. Within the damage pattern was minor longitudinal deformation to the hood and bumper beam, with minor fracture of the bumper fascia, grille, and right headlight assembly.

From a front plane perspective (Figure 9), the width of the direct and induced damage (Field-L) for the crush profile measured 156 cm (61.4 in). A residual crush profile documented to the bumper beam of the Jeep produced the following resultant measurements: C1 - C2 = 0 cm, C3 = 10 cm (4.0 in), C4 = 21 cm (8.3 in), C5 = 22 cm (8.7 in), and C6 = 9 cm (3.5 in). Maximum crush was located on the bumper beam at the end of the right front frame rail extension. Based on the observed damage profile, the CDC assigned to the Jeep for the Event 2 impact with the concrete wall for the building was 12FZEW1.

Figure 9. View of the front plane damage profile to the 2011 Jeep Liberty

Figure 10. Damage pattern to the front plane of the Jeep from an overhead perspective

The damage algorithm of the WinSMASH model was used to calculate the severity of the crash for analysis purposes. The total calculated delta V of the Jeep for the front crash event with the building was 24 km/h (14.9 mph). Respective longitudinal and lateral components of the calculated delta V were -24 km/h (-14.9 mph) and 0 km/h (0 mph), which appeared reasonable.

Event Data Recorder

The 2011 Jeep Liberty had an occupant restraints controller (ORC) mounted on the center tunnel between the front seats. The ORC monitored the diagnostic functions of the vehicle's supplemental restraint systems (air bags and safety belt pretensioners) and controlled the deployment/actuation of those devices dependent upon crash event severity. The Jeep's ORC had EDR capabilities, which were supported by the Bosch CDR tool. Data was imaged from the EDR component of the Jeep during the SCI inspection process using software version 17.7.1, via a connection through the vehicle's diagnostic link connector (DLC). The imaged data was reported using software version 19.1.1, and is included at the end of this report as Appendix A.

The Jeep's EDR had the capacity to store up to three events, including deployment or non-deployment event types. Non-deployment events could be overwritten by subsequent events, whereas deployment events could not be overwritten. Stored events were reported in cumulative order, based on chronology and severity. If power to the ACM was lost during a crash event, all or part of data may not have been recorded.

Associative to each reported event was a 5-second pre-crash buffer. Several data points were sampled on a recurring basis of 0.1 seconds, including engine rpm, vehicle speed (mph), engine throttle (% full), accelerator pedal (% full), service brake, brake lamp status, steering input (degrees), PRND status, and other system status data.

Data imaged from the Jeep's ORC indicated that one event was recognized and recorded. The event was a deployment event type, termed "Most Recent Event." It occurred on ignition cycle 6,819, when the odometer reading was 168,178 km (104,501 mi). It was determined that the imaged data was related to the Jeep's impact with the building (Event 2 of the crash).

One DTC relating to the supplemental restraint systems, identified as B1B02, was present at the time of the event. This translated to a driver air bag squib #1 open circuit, and the presence of such a code would be associated with the illumination of the air bag warning lamp. This was confirmed by the imaged data, which indicated that the air bag warning lamp was "on" and had been illuminated for 11,904 minutes prior to the recognized and recorded crash event.

Associated with the recorded event were commands for the actuation of the driver's safety belt pretensioner and deployment of the driver's frontal air bag. Both the first and second stages of the driver's frontal air bag were commanded, with 30 milliseconds elapsing between the two stages. The maximum recorded longitudinal delta V was -33 km/h (-20.4 mph) at 90 milliseconds after algorithm enable (AE), while the maximum recorded lateral delta V was -3 km/h (-1.9 mph) at the same time interval. A portion of the pre-crash buffer is included below:

Time	Engine rpm	Vehicle Speed	Engine Throttle	Accelerator Pedal	Service Brake	Steering Input (degrees)	PRND Status
-5.0	600	0 km/h (0 mph)	4%	0%	ON	153	Park
-4.5	594	0 km/h (0 mph)	4%	0%	ON	153	Park
-4.0	1,036	0 km/h (0 mph)	78%	100%	ON	156	Neutral
-3.5	2,818	6 km/h (4 mph)	99%	100%	ON	156	Drive
-3.0	2,681	24 km/h (15 mph)	59%	0%	ON	160	Drive
-2.5	2,283	17 km/h (10 mph)	97%	100%	ON	344	Drive
-2.0	2,643	24 km/h (15 mph)	49%	90.7%	ON	291	Drive
-1.5	2,708	24 km/h (15 mph)	99%	100%	ON	206	Drive
-1.0	2,815	29 km/h (18 mph)	99%	100%	ON	272	Drive
-0.5	2,531	31 km/h (19 mph)	12%	2.6%	ON	240	Drive

Interior Damage

The interior of the Jeep was inspected for crash-related damage, including intrusion and occupant contact. There was no occupant compartment intrusion associated with the two minor frontal crash impacts. All of the Jeep's doors remained closed during the crash, and were operational post-crash. There was no integrity loss by the occupant compartment.

The unbelted driver became subjected to unrestricted movement during the crash sequence, evidenced by two areas of occupant contact documented by the SCI investigator during the vehicle inspection process. The first was a scuff to the left lower instrument panel (knee bolster), immediately below and to the right of the steering column. This was attributed to contact by the driver's right knee. The second was a circular fracture area to the windshield glazing directly in front of and above the steering wheel, attributed to contact by the driver's head. A few strands of hair were visible in the fracture pattern. Figures 11 and 12 show the occupant contact observed by the SCI investigator and documented during the vehicle inspection.

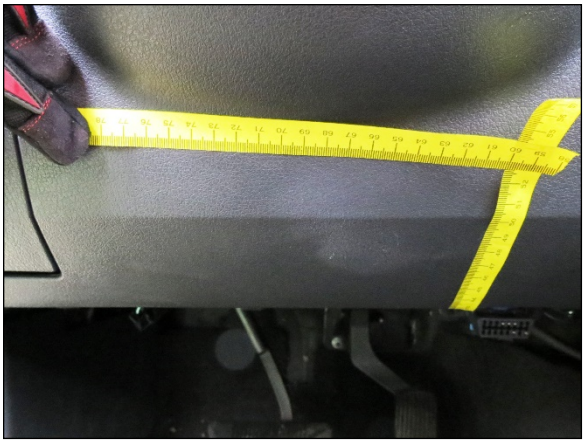


Figure 11. Driver right knee contact to the left lower instrument panel of the Jeep as documented during the SCI inspection

Figure 12. Fracture pattern to the windshield glazing of the Jeep resultant from contact by the driver's head during the crash

Manual Restraint Systems

The Jeep had 3-point lap and shoulder safety belt systems for all five seating positions. The front safety belt systems used continuous loop webbing with sliding latch plates and adjustable D-rings. The driver's safety belt system retracted onto an emergency locking retractor (ELR), while the front right passenger's safety belt used an ELR/automatic locking retractor (ALR). Both front safety belt systems were equipped with retractor pretensioners.

At the time of the SCI inspection, the driver's D-ring was adjusted fully upward. The webbing was in a stowed position and had been drawn taught by the actuation of the retractor pretensioner. Although evidence of historical wear was discernable to both the latch plate and webbing of the driver's safety belt system, it was apparent to the SCI investigator that it was not in use at the time of the crash based on its locked status in an unworn position.

Supplemental Restraint Systems

The Jeep had front safety belt pretensioners and inflatable supplemental restraints. These included a CAC frontal air bag system that consisted of frontal air bags for the driver and front right passenger positions, with safety belt buckle switch sensors, seat track position sensors, and a front-right-occupant presence (weight) sensor. The Jeep also had dual-sensing IC air bags. Only the driver's frontal air bag was deployed.

The driver's frontal air bag had deployed from the module through the I-configuration cover flaps without damage. The air bag measured 70 cm (27.6 in) in overall diameter in its deflated state, and was internally tethered via a 13 cm (5.1 in) diameter circular center stitch pattern. A pair of X-shaped vents were located on the back of the air bag at the 11 and 1 o'clock positions. Maximum excursion of the air bag measured 29 cm (11.4 in) at its center tethered aspect. Nomenclature stamped onto the air bag's fabric identified that was manufactured on March 8, 2010. There was no discernable occupant contact or other damage to the deployed driver's air bag (Figure 13).

Figure 13. Deployed driver's frontal air bag in the Jeep

NHTSA Recalls and Investigations

A query of this specific 2011 Jeep Liberty's VIN on www.nhtsa.gov identified that there were no open recalls or investigations concerning this specific vehicle as of the date of this report.

Unintended Acceleration Allegation Discussion

The SCI inspection of the Jeep included an examination of the vehicle's foot controls and throttle body. The Jeep's foot controls were suspended pedals, separated laterally by a 7 cm (2.8 in) gap and longitudinally by a 6 cm (2.4 in) gap. With reference to the driver, the accelerator pedal was to the right of the brake pedal and behind (farther away, Figure 14). The SCI investigator observed that the floor mat in the Jeep's driver position did not match the profile/contour of the left floor pan. However, the foreign mat did not interfere with the pedals' operation or otherwise impede/restrict their depression/release at the time of inspection.

Figure 14. View of the driver foot controls in the Jeep, showing their lack of impedance/restriction

The engine compartment of the Jeep was inspected, and it was observed that the engine and air intake system were not involved in the collision damage. The SCI investigator removed the polymer air intake and oxygen sensor from in front of the throttle body to allow an inspection of the Jeep's throttle. External power was supplied to the Jeep's electrical system to facilitate the initiation of the vehicle's ignition system and to observe the automatic diagnostic self-test of the throttle by the vehicle. The SCI investigator observed that the throttle moved freely without restriction and that when the ignition was energized, the throttle performed its self-diagnostic check successfully.

Replication verified the integrity and performance of the Jeep's throttle. Figure 15 shows the Jeep's throttle at the time of the SCI inspection. This enabled the SCI investigator to conclude that the throttle was fully functional, and did not play a role in the unintended acceleration of the Jeep.

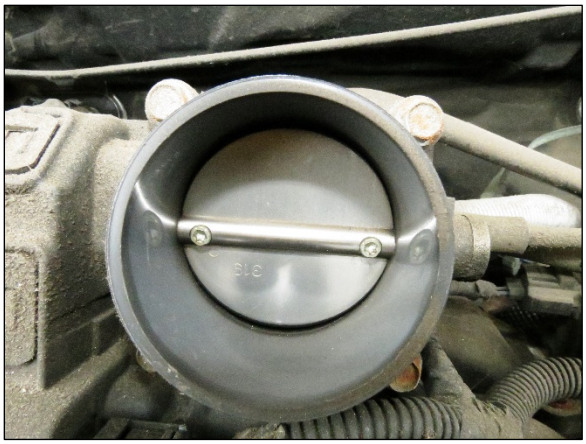


Figure 15. View of the Jeep's throttle body. A vehicle self-diagnostic test at ignition initiation confirmed functionality of the throttle during SCI inspection

The data imaged from the Jeep by the manufacturer's representative and shared with NHTSA revealed the presence of DTC C107C, which had been active for a total of 4,526 minutes. According to a DTC reference guide, code C107C is defined as "Brake Pedal Switch 1 / 2 Stuck."[2] The three possible causes of this code were (1) a malfunctioning brake pedal switch, (2) an open or short in the brake pedal switch harness, or (3) a poor electrical connection in the brake pedal switch circuit. Presence of this code was accompanied by illumination of the vehicle's ABS warning light and check engine light. In addition, the BTSI was overridden to enable a driver to shift the vehicle's transmission from park without depressing the brake pedal.

As previously discussed, video surveillance captured the entire pre-crash circumstances, vehicle trajectory, and crash events. The SCI investigator reviewed the video, but was unable to draw any conclusions concerning the unintended acceleration based on the video footage. The angle of the vehicle in relation to the positioning of the video camera does not afford an unobstructed view of the Jeep's brake lights, such that the viewer cannot determine if the brake lights are illuminated during the viewing timeframe. The video was recorded at an unknown frame-rate that is not equivalent to real-time, and therefore cannot be accurately used for time-distance comparison calculations. It was noted that the brake switch status reported by the imaged EDR data was "on" for the entire 5-second pre-crash buffer.

During the SCI vehicle inspection, the SCI investigator energized the Jeep's electrical system using an external power supply. Several attempts were made to start the vehicle for the purpose of testing the functionality of the BTSI. However, the SCI investigator was unable to successfully start the vehicle's engine. The test of the BTSI was therefore performed with the engine off and the ignition remaining energized. Under those circumstances, the transmission selector would not shift, unless the SCI investigator depressed the brake pedal. With the brake depressed, the transmission shifted freely. Although this appeared to indicate that the BTSI was functional during the post-crash inspection, it is possible that the force of the impact had released the brake pedal switch.

[2] Bosch Diagnostics: *Diagnostic Code Lookup*. www.boschdiagnostics.com/diy/code-lookup

This SCI investigation documented the following observations and facts.

1. The driver stated during the interview that she was using the 3-point lap and shoulder safety belt at the time of the crash. However, contact evidence to the windshield and the taut status of the safety belt against the left B-pillar indicated that the driver was not belted. The vehicle's EDR was not configured to record the driver's belt switch status.
2. The EDR data reported that DTC B1B02 had been active for 11,904 minutes. This code indicated that the driver's air bag squib #1 had an open circuit, which was accompanied by the illumination of the air bag warning lamp on the instrument cluster. Deployment of the air bag in a crash event was not affected by the DTC.
3. The manufacturer data reported that DTC C107C had been active for 4,526 minutes. This "Brake Pedal Switch 1 / 2 Stuck" code illuminated the brake system warning lamp on the instrument cluster. The presence of the "stuck" brake pedal switch would have effectively overridden the BTSI and enabled a driver to shift the Jeep's transmission from park without direct brake pedal application.
4. The imaged EDR data reported that for all recorded pre-crash data intervals, the service brake status was "on." Simultaneously, the recorded pre-crash data showed varying levels of depression of the accelerator pedal, ranging from 0 to 100 percent, in fluctuating cycles.
5. The imaged EDR data reported that the vehicle's transmission was shifted from park into neutral while the accelerator pedal was depressed. The accelerator pedal was depressed to 100 percent when the transmission was shifted into drive.
6. The presence of the aforementioned DTC's and corresponding illumination of multiple warning lights in the instrument cluster should have been visible to all drivers of the vehicle.

Based on the data gathered through the course of this SCI investigation, it was determined that the Jeep driver experienced a misapplication of the pedals and mistakenly was depressing the accelerator pedal while she perceived that she was depressing the brake pedal. She released and then reapplied pressure to the accelerator pedal twice over the duration of the recorded pre-crash buffer and, combined with her statements made during SCI interview, this indicated that the driver believed that she was depressing the brake pedal and was unable to ascertain why the braking system appeared not to respond to her pedal application. In addition, she was unaware of the "stuck" brake switch, and thus perceived that she was depressing the brake pedal in order to disengage the BTSI.

The driver's pedal misapplication was compounded by the brake pedal switch status and active corresponding DTC. Warning lights in the instrument cluster remained illuminated for significant time leading up to the crash. The illumination of the warning lights should have triggered a mechanical/maintenance service to be performed by the fleet management staff. However, it is unknown if the fleet management staff had ever received notification or were even aware of the multiple warning lights illuminated in the Jeep's instrument cluster prior to the crash. No detailed history of the vehicle was available as part of this SCI investigation.

The “Brake Pedal Switch 1 / 2 Stuck” status of the brake pedal switch at the time of the crash was apparent from the recovered DTC and supported by the imaged EDR data. The reported service brake status “on” for all recorded pre-crash data intervals in conjunction with the changing status of the accelerator pedal supported a driver misapplication of the pedals. It is nearly impossible for a driver to be able to maintain complete depression of one pedal while simultaneously fluctuating depression of a second pedal, unless the driver uses both feet at the same time. Because the driver reported during interview that she used only her right foot to attempt to control the vehicle, it was apparent to the SCI investigator that the driver had perceived that she was applying the brake pedal when she was instead applying pressure to the accelerator pedal. The driver did not realize or perceive her pedal misapplication at any time prior to the crash.

2011 Jeep Liberty Occupant Data

Driver Demographics

Age/sex:	51 years/female
Height:	170 cm (67 in)
Weight:	59 kg (130 lb)
Eyewear:	None
Seat type:	Forward-facing bucket seat with adjustable head restraint
Seat track position:	Rearmost
Manual restraint usage:	None used; 3-point lap and shoulder safety belt system available
Usage source:	Vehicle inspection
Air bags:	Front and IC air bags available; Frontal deployed
Alcohol/drug involvement:	None
Egress from vehicle:	Exited vehicle under own power
Transport from scene:	None
Type of medical treatment:	Sought medical treatment at a local hospital

Driver Injuries

Injury No.	Injury	Injury Severity AIS 2015	Involved Physical Component (IPC)	IPC Confidence Level
-	Traumatic brain injury, NFS (*self-diagnosed*)	N/A	N/A	N/A
-	Concussion without loss of consciousness, NFS (*self-diagnosed*)	N/A	N/A	N/A

Source: Driver interview; several hospital records requests denied

Driver Kinematics

The 51-year-old female was assigned to the 2011 Jeep Liberty for the upcoming workday at her place of employment. She entered the vehicle, adjusted the seat track to its rearmost position, and drove the vehicle across the parking lot of the private commercial facility property. The driver then brought the vehicle to a controlled stop, and placed the transmission shift lever into the Park position. She exited the vehicle, gathered refuse from inside the vehicle, and then disposed of it into the nearby dumpster. As she returned to the Jeep, a coworker came alongside her in another vehicle. After a brief conversation, the other vehicle began to pull away as the driver reentered the Jeep. She immediately attempted to drive the vehicle away, without using the safety belt system for manual restraint.

Based on the data imaged from the Jeep's EDR, it was apparent to the SCI investigator that the driver experienced a misapplication of the accelerator pedal as she attempted to depress the brake pedal and shift the vehicle into drive. As a result, when she shifted the vehicle from Neutral into

Drive, the vehicle's engine was already revving and the Jeep accelerated rapidly from its stopped position.

This startled the driver, but she remained in the driver's seat as the vehicle lurched forward. The driver indicated during the interview that she gripped the steering wheel tightly and steered the vehicle to the left to avoid a parked vehicle that was directly to her north. The Jeep initiated a left arching trajectory and struck the rear of the coworker's other vehicle that was pulling away from the Jeep. Associated forces were minor in severity, and were of insufficient severity to alert the vehicle's ORC or displace the driver in the Jeep. She instead maintained her tight grip on the steering wheel and attempted to control the vehicle's speed by releasing and reapplying pressure on the vehicle's foot controls. However, she continued to provide accelerator pedal misapplication pressure, and the Jeep maintained its errant trajectory.

At impact with the concrete wall of the building, the unbelted driver initiated a forward trajectory. She was displaced forward, where her right knee engaged the left lower instrument panel and her chest loaded the deployed driver's frontal air bag. Due to her unbelted pre-crash status and the Jeep's abrupt deceleration, the displaced driver's head flexed forward and above the deployed air bag. She contacted the windshield of the Jeep with her forehead, which fractured the glazing. Several strands of her hair became captured in the glazing's sharp fractures.

The driver rebounded into the driver's seat as the Jeep came to final rest with its front plane engaged against the concrete wall of the building. She opened the left front door and exited the vehicle under her own power. Video surveillance footage showed the driver walking to the east away from the Jeep, holding her right knee with her right hand and her forehead with her left hand. Employees at the facility who overheard the crash came running to see what had happened and comforted the driver.

The driver ultimately sought medical evaluation at a local hospital. She was treated and released on the same day as the crash. Multiple requests for medical record documentation from the treating facility were refused.

Other Vehicle

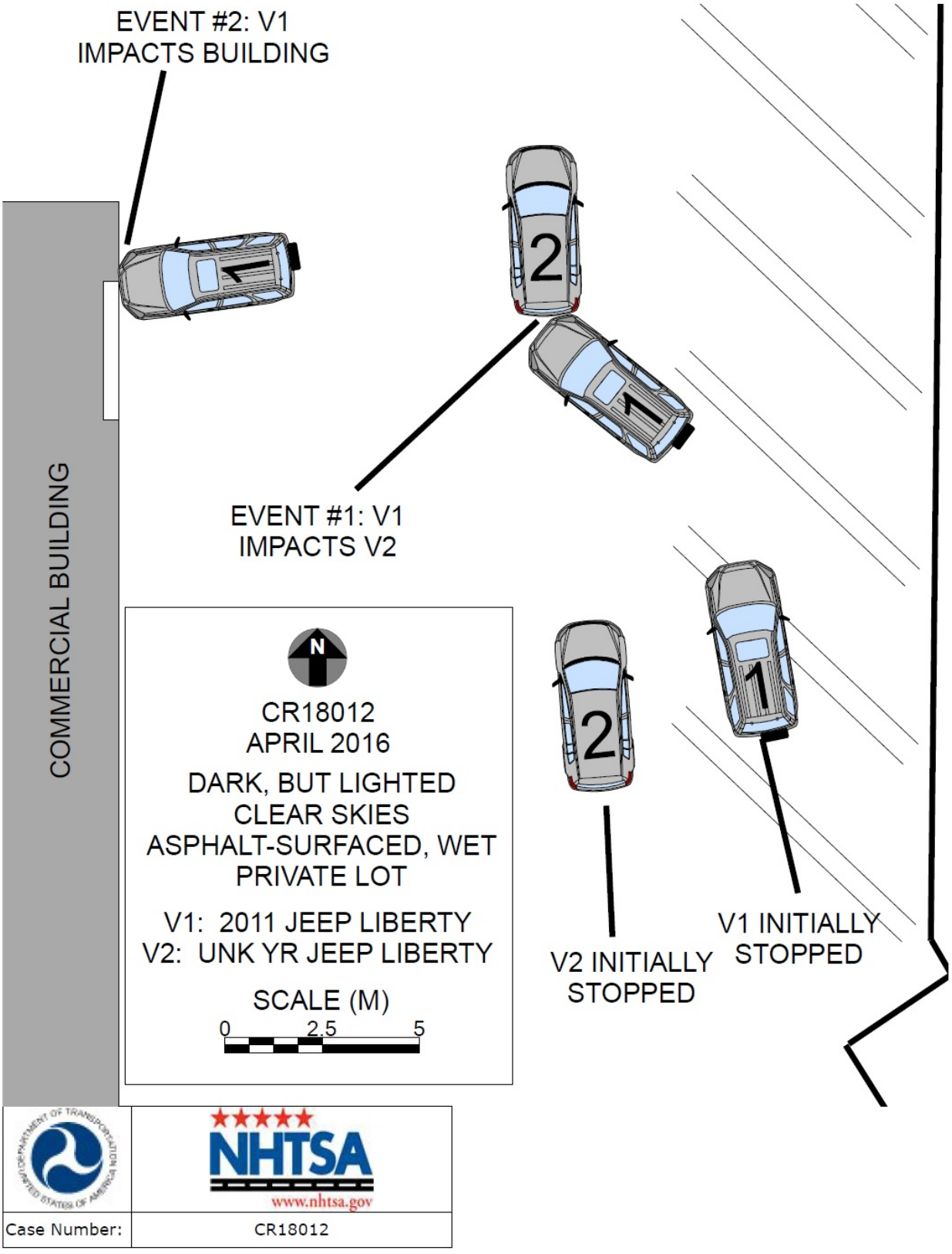
Description

The other vehicle involved in this crash was another Jeep Liberty (model year unknown) also owned and operated by the fleet company. No specifics concerning this vehicle were available to the SCI investigator. Based on the video surveillance footage, damage associated with the impact by the Jeep (case vehicle) was located on the right aspect of the rear plane. The estimated CDC assigned to the other vehicle was 06BZEW1.

Occupant Data

The unknown year Jeep Liberty (other vehicle) was operated by an unknown person. According to the corporate owner of the vehicles and facility, that person did not sustain injury as a result of the incident, and did not receive medical care.

Crash Diagram



Appendix A: 2011 Jeep Liberty Event Data Recorder Report

The EDR report contained in this technical report was imaged using the current version of the Bosch CDR software at the time of the vehicle inspection. The CDR report contained in the associated Crash Viewer application may differ relative to this report.

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	1J4PN2GK1BW******
User	
Case Number	
EDR Data Imaging Date	
Crash Date	
Filename	CR18012_V1_ACM.CDRX
Saved on	
Imaged with CDR version	Crash Data Retrieval Tool 17.7.1
Imaged with Software Licensed to (Company Name)	Company Name information was removed when this file was saved without VIN sequence number
Reported with CDR version	Crash Data Retrieval Tool 19.1.1
Reported with Software Licensed to (Company Name)	NHTSA
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 direct-to-module imaging where the Airbag Control Module (ACM) is disconnected and removed from a vehicle, make sure the ACM is not moved, tilted or turned over while connected to and powered by the CDR Interface Module (with appropriate adaptors in place, where required). 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 direct-to-module imaging could cause new events to be recorded in the ACM.

- For additional definitions, please refer to the CDR Help File Glossary.
- As the VIN may be used to determine the configuration of the restraint system, it is imperative that the correct VIN be entered into the CDR Tool during the imaging process.
- For Fiat vehicles, the “Read VIN from Vehicle” feature in the CDR Tool will not work. The VIN will have to be manually entered.
- Delta-V is first available starting with some 2010 MY vehicles.
    - On vehicles not equipped with side impact sensing, Lateral acceleration and Delta-V will not be available.
    - Lateral acceleration is also not available for the 2008-2009 MY Chrysler Town and Country/ Dodge Grand Caravan/Lancia Voyager and 2010 MY Dodge Journey and Fiat Freemont even when equipped with side impact sensing.
    - Longitudinal and Lateral Delta-V are not available for the 2010-2012 MY Chrysler Town and Country/ Dodge Grand Caravan/Lancia Voyager.
- The following table provides an explanation of the sign notation for data elements that may be included in this CDR report. All directional references to sign notation are from the perspective of the driver when seated in the vehicle facing the direction of forward vehicle travel.

Data Element Name	Positive Sign Notation Indicates
Longitudinal Acceleration	Forward
Delta-V, Longitudinal	Forward
Maximum Delta-V, Longitudinal	Forward
Lateral Acceleration	Left to Right
Delta-V, Lateral	Left to Right
Maximum Delta-V, Lateral	Left to Right
Steering Input*	Steering wheel turned counter clockwise
Angular Rate	Left to Right RotationClockwise rotation around the longitudinal axis
Yaw Rate**	Counter clockwise rotation

* The Steering Input for the following vehicles has a positive sign notation for the steering wheel turned clockwise:

- o 2006 - 2007 Grand Cherokee
- o 2006 - 2007 Commander
- o 2005 - 2010 300, Magnum, and Charger
- o 2008 - 2010 Challenger

**The Yaw Rate for the 2011-2012 MY RAM has a positive sign notation for clockwise rotation.

CDR FILE INFORMATION:

- For ACMs that store non-deployment events, an event will be stored when the delta V is approximately 5 mph (8 km/h) or greater within a 150 ms interval.
- For non-NAFTA ACMs that control pedestrian protection devices, a non-deployment event will be stored when the pedestrian protection devices are activated.

Event(s) Recovered definitions:
- None - There are no stored events in the ACM
- Not Retrievable - Event Data may be 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 modules with 3 stored events)
- 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)
- For TRW modules:
  - If there is a side impact, two EDR events may be stored for the one side impact event. The second event may be recorded due to the Lateral Delta V exceeding 5 mph (8 km/h) within a 150 ms interval after the side deployment occurred.
- For some Fiat vehicles:
  - Two EDR events may be stored for one impact event. The second event may be recorded due to the deployment of the frontal airbag, 3rd stage passenger.
- During an event, if power to the ACM is lost, all or part of the event data record may not be recorded. An indication may be observed in the recorded data 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 /Pre-Crash Recorder Status.
- For 2010-2012 MY Dodge Journey and 2010-2012 MY Chrysler Town and Country/Dodge Grand Caravan/Lancia Voyager, a non-deployment event will also display "Interrupted" for the Vehicle Event/Pre-Crash Recorder Status. This non-deployment event can be distinguished from a power loss by:
  - In the System Status at Event and Deployment Command Data section, Event/Deployment Recorder Status will display "Interrupted".
  - In the Deployment Command Data section, a value of "No" will be displayed for each deployment data element.

SYSTEM STATUS AT RETRIEVAL:

- Original VIN - 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 cannot be changed.

SYSTEM CONFIGURATION AT RETRIEVAL:

- The System Configuration data tables indicate the components that the ACM for a particular vehicle monitors and/or controls.
- Active Head Restraint (AHR) - This refers to the active head restraint systems that are electronically controlled by the ACM. AHRs may activate but not store an EDR Record if the delta V does not exceed the minimum delta V threshold. It is possible that the AHRs may activate after the EDR record has been stored and written, based on achieving the minimum delta V. This condition will result in an EDR but no record of the AHR activation in the CDR report. Activation of only the AHRs, if stored, will be a non-deployment event.

SYSTEM STATUS AT EVENT (if applicable):

- Event Number -
  - Indicates the event number per vehicle ignition cycle for 2010-2012 Sebring, Avenger, Caliber, Nitro, Compass, Liberty, Patriot, Wrangler, and Ram
  - Indicates the overall order of the events for all other applicable vehicles.
- Event Signal Transmission, Complete - "Yes" indicates that the ACM has sent the automatic collision notification (ACN) message.
- Odometer at Event - Vehicle odometer at the time of the event

- Operation via Energy Reserve Only -"Yes" indicates that the ACM had lost power at or before T0 and was only operating on energy reserve at T0.
- Side Fuel Cutoff, Activated - Applicable to the Fiat 500, "Yes" indicates that the ACM has sent the automatic collision notification (ACN) message.
- System Voltage at Event, ECU - Voltage at the ACM as measured by the ACM.
- System Voltage at Event, Bussed - Voltage of the vehicle system, communicated on the communication bus to other electronic modules in the vehicle.
- Temperature, Outside - Ambient Air Temperature.
- Time, Airbag Warning Lamp On - This is a cumulative time. It indicates the total amount of time that the ACM has requested the Airbag Warning Lamp be turned on.
- This time does not include the warning lamp bulb check time, which occurs at every ignition cycle
- Time from event 1 to 2 -
    - If only one event is stored, either a value of 0 or >5 may be displayed for this data element.
    - If multiple events exist in the EDR, the time from event 1 to event 2 is defined as:
        - For Bosch and TRW modules, the time from the prior recorded event (even if it has been overwritten) to the current recorded event.
        - For Continental modules, the time from the prior existing recorded event (as long as it is still displayed in the CDR report) to the current recorded event. If the prior event in a multi-event condition is overwritten by a subsequent event, the multi-event status will no longer be displayed.
- Time, Operation System Time - This is a cumulative lifetime timer for the ACM. It indicates the total amount of time the ACM has been powered up.
- Total Number of Events -
    - Stops incrementing when each event record is recorded by the ACM for 2010 - 2012 Sebring, Avenger, Caliber, Nitro, Compass, Liberty, Patriot, Wrangler, and Ram
    - Indicates the total number of events that the ACM has recorded, including those non-deployment events that have been overwritten by a subsequent event, for all other applicable vehicles.
- VIN at Event, Last 8 Digits- Last 8 digits of the VIN of the vehicle at the time the ACM records the event.

STATUS OF THE DATA IN THE MOST RECENT EVENT (if applicable):

Definitions for Data Blocks 1 - 7 and Overall Data Record Complete:

1. Crash Record (system status and DTCs)
2. NHTSA Table #1 Vehicle System data
3. NHTSA Table #1 Longitudinal delta-V
4. NHTSA Table #2 Vehicle System Data
5. NHTSA Table #2 Lateral delta-V - will be a NO if vehicle is not equipped with side sensing
6. ACM angular rate data - will be a NO if vehicle is not equipped with roll-over sensing
7. Other Vehicle System Data - Chrysler Specific Data

Overall Data Record Complete - Yes, No is defined based on the specific vehicle configuration. For example, a NO may be present for a non-applicable data block but a YES may be present for overall data record complete as all of the applicable data is complete.

DEPLOYMENT COMMAND DATA (if applicable):

- A "Yes" for a particular item in the Deployment Command Data section of the report indicates that the ACM commanded the deployment /activation of the associated device.
- Deployment of Seatbelt Pretensioners is not stored in the EDR for the 2010 MY vehicles that utilize a TRW ACM. Assessment of the seatbelt pretensioners' deployment status in these vehicles must be made by physical inspection in the vehicle.

DTCs PRESENT AT START OF EVENT (if applicable):

- If any DTCs (diagnostic trouble codes) are present in the ACM at the start of the event, these will be listed in this section. A dealership service manual can be used to decode the DTCs.

PRE-CRASH DATA:

- The recorded Event may contain Pre-Crash data. Pre-Crash data from the various electronic control modules in the vehicle is transmitted to the Airbag Control Module via the vehicle's communication bus.
- 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.
- (if equip.) - If a parameter name is followed by the words (if equip.), then the parameter is only valid for vehicles equipped with the associated parameter/vehicle system.
- The MIL (Malfunction Indicator Lamp) Status for the various recorded systems indicates the requested 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. The appropriate diagnostic 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.
- ABS Activity - “Yes” indicates an active ABS event in which the ABS is actively controlling the brakes.
- ABS MIL- 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.
- Accelerator Pedal, % Full - This indicates the actual position of the accelerator pedal.
- Brakes:
    - Brake Lamps On - “On” indicates that the brake lamps/CHMSL are illuminated.
    - Brake Switch #2 Status - “On” indicates that the brake pedal is depressed.
    - Braking System, Intervention by ESP - “Yes” indicates that the stability control system has engaged the brakes.
    - Braking System, Intervention Enabled “Yes” indicates that the ESC system is functional.
    - Braking System, Emergency Braking - “Yes” indicates that panic brake assist is active.
    - Braking System, Maximum Braking -- “Yes” indicates that ABS is active on all 4 wheels.
    - Panic Brake Assist Active - “Yes” indicates that all four of the brake circuits are undergoing ABS control.
    - Service Brake - “On” indicates that the brake pedal is depressed.
- Cruise Control:
    - Cruise Control System/Status -“On” indicates that the Cruise Control system is turned on.
    - Cruise Control Engaged/Active - “Engaged”/”Yes” indicates the Cruise Control system is actively controlling vehicle speed. “Not Engaged”/”No” indicates the system is NOT controlling vehicle speed.
- Electronic Brake/Stability Control information:
    - ESC/ESP MIL - This indicates the ESC/ESP fault indication lamp status. It will only be “On” when there is a fault or thermal mode shutdown in the ESC/ESP system. The ESC/ESP module DTC’s should be read and recorded for final system interpretation.
    - ESP Lamp - 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 “Yes”, then an ESP, Traction Control or Trailer Sway Control (if equipped) event was active at the time of data capture.
    - ESP Disabled - “Yes” indicates that ABS & ESP have been disabled by the driver or due to system performance.
    - ESP/ESC Functional/Active - “YES” indicates that the ESP system is functional and has no faults.
    - ESC System Status - “OK’ indicates no faults in the ABS or ESC system that affect the system functionality; “ABS Fault” indicates a fault in the ABS system and “ESC Fault” indicates a fault in the ESC system.
    - Engine Torque Applied - “No” indicates 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.
    - Stability Control - This is the status of the ESC symbol - “car with squiggly lines” indicator lamp. “On” indicates that the ESC system is functional. “Off” indicates that the ESC system was turned off either by the driver or due to a fault or thermal mode shutdown. “Engaged” indicates an active ESC/TCS event.
    - Traction Control Intervention Active - “Yes” indicates that the traction control system is actively controlling the vehicle’s wheels.
- Engine RPM - 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.
- Engine Throttle, % Full - This indicates the actual position of the Engine Throttle blade.
- ETC -
    - On vehicles equipped with ETC, “Accelerator Pedal, % Full” and “Engine Throttle, % Full” are relative values - relative pedal position and relative engine throttle. These parameters may record values of less than 100% when the pedal/throttle is actually at its maximum. (Max. ~ 77%)
    - ETC Lamp - Lamp “ON “indicates there is an active Electronic Throttle DTC.
    - ETC Lamp Flashing - “Yes” indicates that the ETC is in the limp-in mode.
- PCM MIL - This indicates the PCM fault indicator lamp status. It will only be “On” when there is a fault in the PCM. The Powertrain Control Module DTC’s should be read and recorded for final system interpretation.
- Raw Manifold Pressure - This indicates engine load in kPa.
- Speed, Vehicle Indicated - This indicates the average of the drive wheels. 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. On the 2008 - 2009 Dodge Grand Caravan, 2008-2009 Chrysler Town and Country and 2009 Dodge Journey, the speed resolution is 2 kph. On all other vehicles, the resolution is 1 kph. On some vehicles capable of speeds in excess of 255km/h (about 158mph), the actual vehicle speed may have exceeded the reporting range. It is always prudent to check the reported wheel speeds and other parameters to confirm the Speed, Vehicle indicated value(s).
- Tire Information:
    - XX where LF = Left Front Tire, RF = Right Front Tire, LR = Left Rear Tire, and RR = Right Rear Tire.
    - Tire X Location - This indicates the location of the tire pressure sensor data being displayed for that time stamp. Default is used to indicate that the location of the tire pressure sensor is unknown or there is no tire pressure sensor in that 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 X Pressure/Tire Pressure Status, XX -This indicates the actual pressure status of the Tire Location defined in the previous column (Tire X Location) or by the values for XX. Possible values are LOW, NORMAL, HIGH, or SNA for this parameter. Vehicles with Base Tire Pressure Monitoring systems may display NORMAL even though these vehicles do not send actual pressure values across the communication bus.
    - Tire X Pressure/Tire Pressure, XX (psi) - This indicates the actual tire pressure value of the Tire Location defined in the previous column (Tire X Location) or by the values for XX. 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.
    - Wheel Speed, XX - This indicates the speed value (in revolutions per minute) of a particular tire as denoted by XX.
    - For the following vehicles, the tire location, if displayed, may not be accurate if the tires have been rotated:

  - 2011-2012 MY Jeep Wrangler
  - 2010-2012 MY Jeep Patriot
  - 2010-2012 MY Chrysler 200
  - 2010-2012 MY Jeep Compass
- Tire pressure is not stored in the EDR for the following vehicles. If a value is displayed, it may not be accurate:
  - 2011-2012 MY Jeep Grand Cherokee
  - 2011-2012 MY Dodge Durango
  - 2010-2012 MY Dodge Challenger
  - 2011-2012 MY Chrysler Town and Country
  - 2011-2012 MY Dodge Grand Caravan
  - 2010-2012 MY Ram
- Tire Pressure Monitor Indicator Lamp - “On” indicates a fault in the tire pressure monitoring system. The TPM module DTC’s should be read and recorded for final system interpretation.
- "T0" ("Time zero" where ‘0’ is seen as subscript) is defined as "beginning of the crash event". T0 is the time at which the ACM algorithm is activated, a specific Delta-V is exceeded, or a non-reversible restraint device is deployed. T0 may be defined differently for front, side, rear and roll-over events.
  - If multiple algorithm decisions (i.e.: frontal, side, rear and/or rollover) are made before the first recorded event ends, all of those events are part of the same event record and "T0" is defined as the "T0" from the first recorded event.
  - In the Pre-Crash data tables, the relative time marker "-0.1s" represents the last set of data captured in the buffer prior to "T0."
- Transmission/Shifter Position -
  - Gear Status - This indicates the current transmission gear.
  - PRND/PRNDL Status - This indicates the status of the Shifter Position.
  - Reverse Gear - For manual transmission vehicles only, “Yes” indicates the transmission is in the reverse gear.
  - Shift Gear Position - This indicates the current transmission gear/Shifter Position.
- Vehicle Data Recorder Complete - Due to the interruption of data recording in one section, this data element may display “Interrupted” for all sections when some data sections are actually complete.

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 may 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 cannot be imaged by the CDR tool, but may be imaged by the supplier.
- For 2006 & 2007 MY, some PT Cruiser models may contain EDR data that cannot be imaged by the CDR tool, but may be imaged by the supplier
- 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_r025

System Status at Retrieval

Original VIN	1J4PN2GK1BW******
Airbag Control Module Part Number	68148047AC
Airbag Control Module Serial Number	TRLMF241301539a
Airbag Control Module Supplier	TRW

System Configuration at Retrieval

Configured for Driver Frontal Airbag	Yes
Configured for Driver Knee Airbag	No
Configured for Driver Buckle Pretensioner	No
Configured for Driver Retractor Pretensioner	Yes
Configured for Driver Seatbelt Switch	No
Configured for Driver Seat Track Position Sensor	No
Configured for Driver Active Head Restraint	Yes
Configured for Left Curtain Airbag	Yes
Configured for Left Side Seat Airbag	No
Configured for Passenger Frontal Airbag	Yes
Configured for Passenger Knee Airbag	No
Configured for Front Passenger Buckle Pretensioner	Yes
Configured for Front Passenger Retractor Pretensioner	Yes
Configured for Front Passenger Seatbelt Switch	Yes
Configured for Front Passenger Seat Track Position Sensor	No
Configured for Front Passenger Active Head Restraint	Yes
Configured for Right Curtain Airbag	Yes
Configured for Right Side Seat Airbag	No
Configured for Front Passenger Occupant Classification System	Yes
Configured for Occupant Detection Sensor	No
Configured for Left Up Front Sensor	Yes
Configured for Right Up Front Sensor	Yes
Configured for Left Door Pressure Sensor	No
Configured for Left Side Row 1 Sensor	Yes
Configured for Left Side Row 2 Sensor	Yes
Configured for Left Side Row 3 Sensor	No
Configured for Right Door Pressure Sensor	No
Configured for Right Side Row 1 Sensor	Yes
Configured for Right Side Row 2 Sensor	Yes
Configured for Right Side Row 3 Sensor	No

System Status at Event (Most Recent Event)

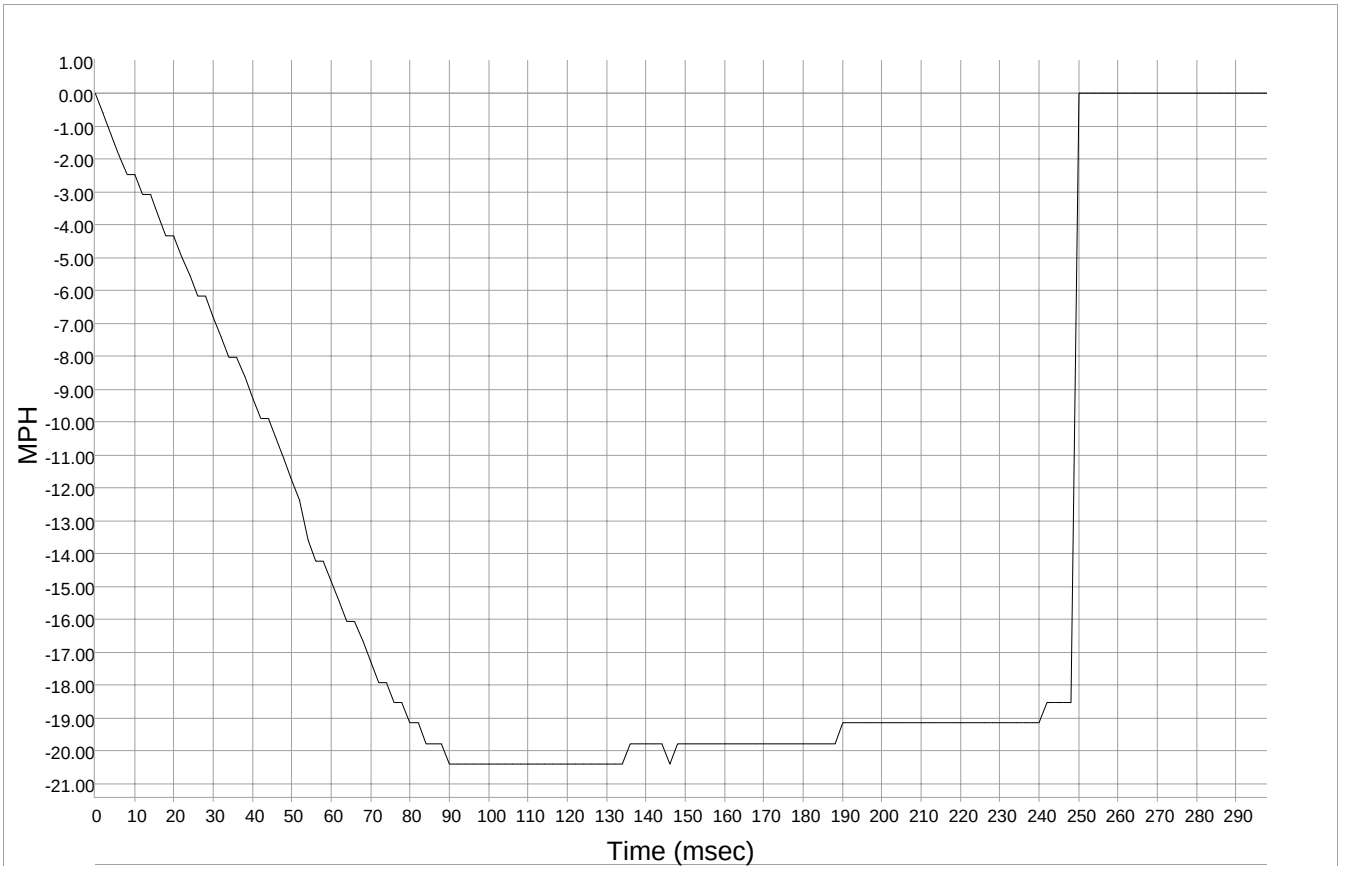
Event Recorder Status	Complete
Event Record Status - Delta-V, Longitudinal	Complete
Event Record Status - Delta-V, Lateral	Complete
Event Record Status - Angular rate	Complete
Event Number	1
Total Number of Events Recorded	1
Odometer Recorded at Event (miles [km])	104501 [168178]
Operation System Time at Event (min)	255887
Ignition Cycles, Crash	6819
VIN Recorded at Event (last 8 characters)	BW******
Vehicle System Voltage Recorded at Event (V)	14.8
Operation Via Energy Reserve Only	No
Safety Belt Switch Configured, Driver (if equipped)	No
Safety Belt Switch Configured, Passenger (if equipped)	Yes
Safety Belt Status, Passenger (if equipped)	Unbuckled
Safety Belt Switch Fault, Passenger (if equipped)	No
Seat Track Position Sensor, Driver (if equipped)	Not Configured
Seat Track Position Sensor, Passenger (if equipped)	Not Configured
Airbag Warning Lamp "On" at Event	On
Airbag Warning Lamp "On" Time Before Event (min)	11904

Deployment Command Data (Most Recent Event)

Event Recorder Status	Complete
Frontal Airbag Deployment, 1st Stage, Driver	Yes
Frontal Airbag Deployment, 2nd Stage, Driver	Yes
Frontal Airbag Deployment, Time Between Squib #1 and Squib #2, Driver (ms)	30
Inflatable Knee Airbag Deployment, Driver (if equipped)	No
Seatbelt Pretensioner Deployment, Driver (if equipped)	Yes
Side Airbag(s) Deployment, Left Side (if equipped)	No
Frontal Airbag Deployment, 1st Stage, Passenger	No
Frontal Airbag Deployment, 2nd Stage, Passenger	No
Frontal Airbag Deployment, Time Between Squib #1 and Squib #2, Passenger (ms)	0
Seatbelt Pretensioner Deployment, Front Passenger (if equipped)	No
Side Airbag(s) Deployment, Right Side (if equipped)	No

DTCs Present at Start of Event (Most Recent Event)

DTC Number	
B1B02	Active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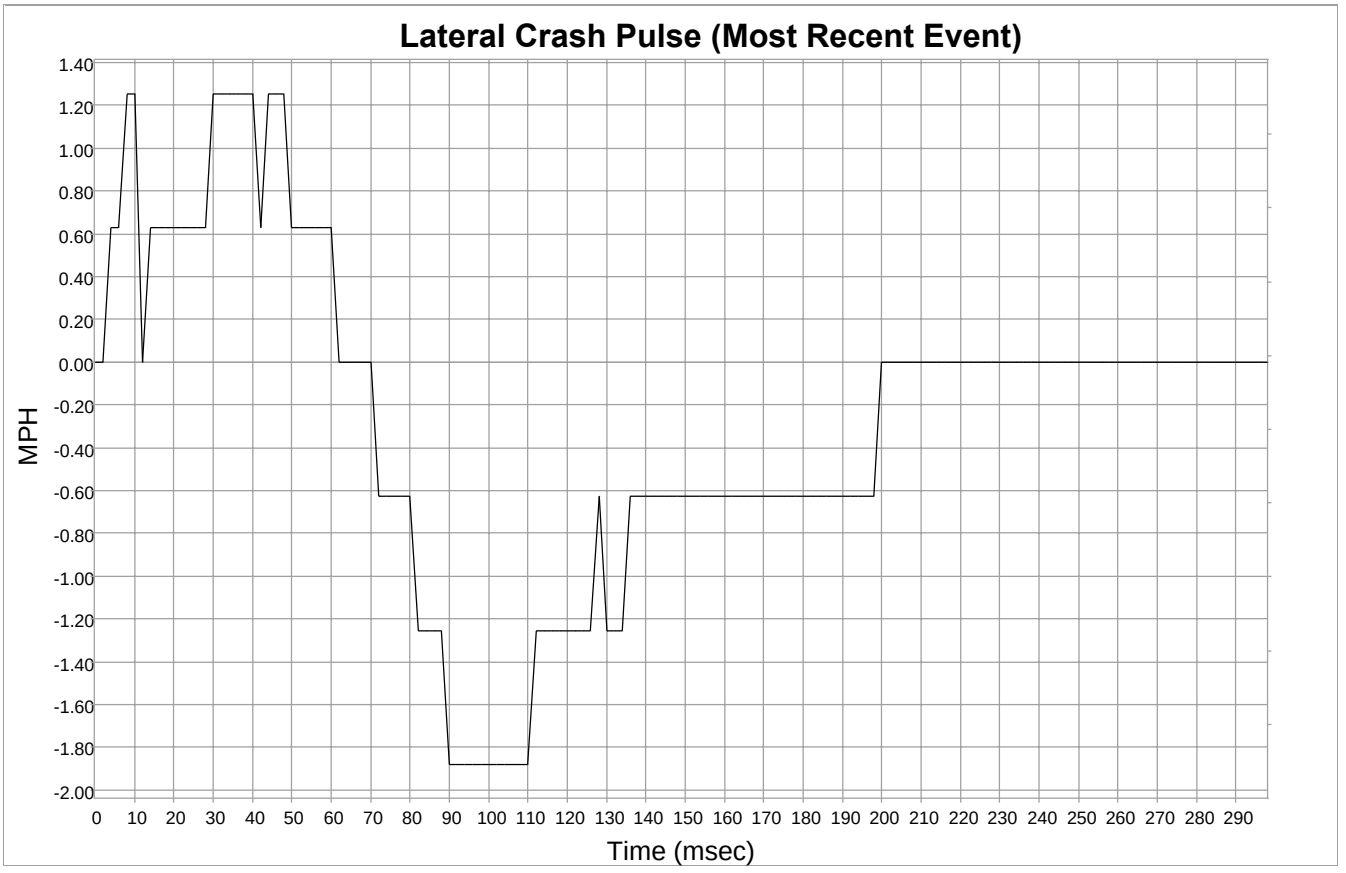
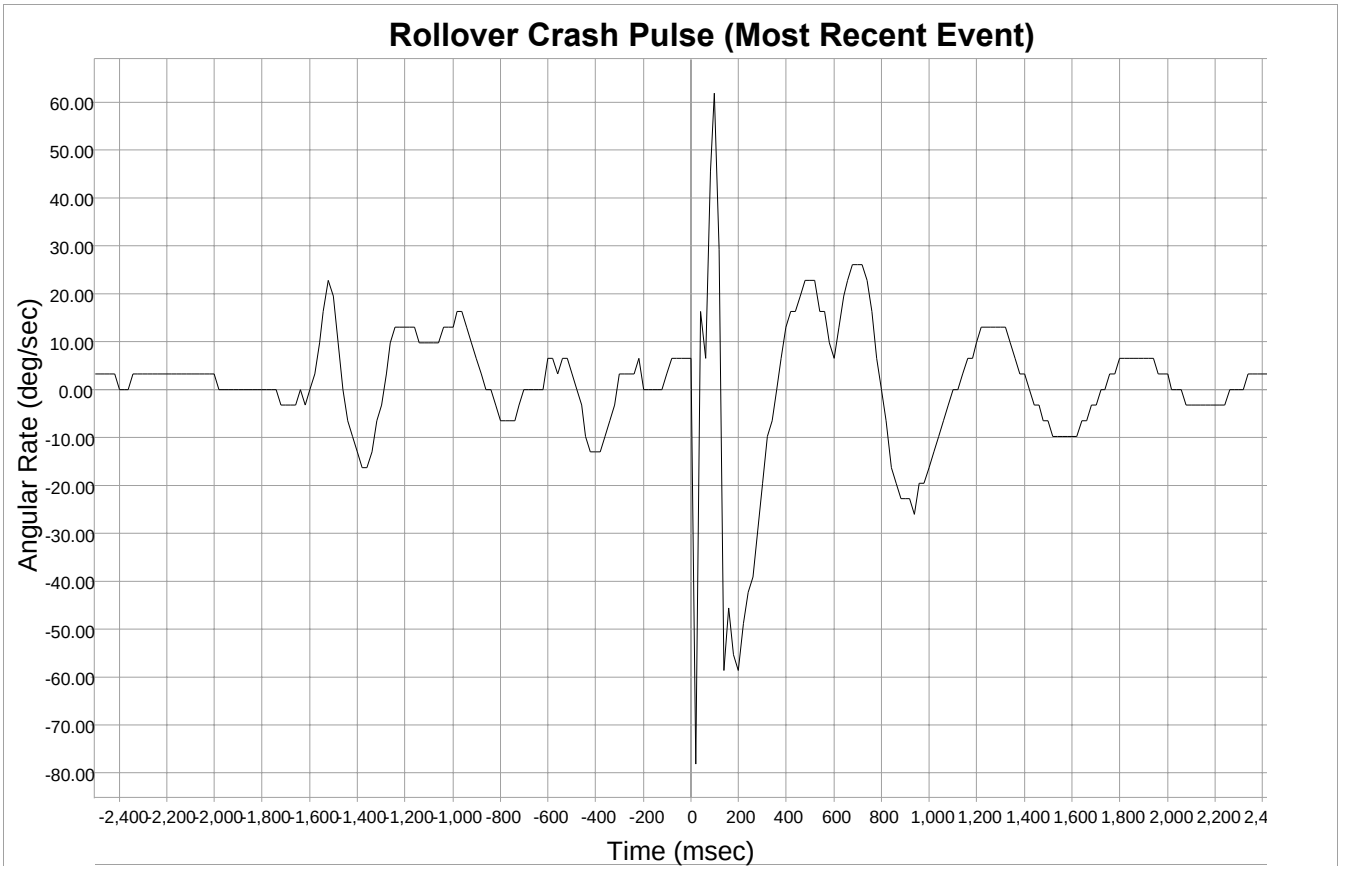
Time (msec)


Lateral Crash Pulse (Most Recent Event)
MPH
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
-0.40
-0.60
-0.80
-1.00
-1.20
-1.40
-1.60
-1.80
-2.00
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290
Time (msec)


Rollover Crash Pulse (Most Recent Event)
Angular Rate (deg/sec)
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-2,400 -2,200 -2,000 -1,800 -1,600 -1,400 -1,200 -1,000 -800 -600 -400 -200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,4
Time (msec)

Longitudinal Crash Pulse (Most Recent Event)

Time (msec)	Delta-V, Longitudinal (MPH [km/h])	Time (msec)	Delta-V, Longitudinal (MPH [km/h])	Time (msec)	Delta-V, Longitudinal (MPH [km/h])
0	0.0 [0]	100	-20.4 [-33]	200	-19.2 [-31]
2	-0.6 [-1]	102	-20.4 [-33]	202	-19.2 [-31]
4	-1.2 [-2]	104	-20.4 [-33]	204	-19.2 [-31]
6	-1.9 [-3]	106	-20.4 [-33]	206	-19.2 [-31]
8	-2.5 [-4]	108	-20.4 [-33]	208	-19.2 [-31]
10	-2.5 [-4]	110	-20.4 [-33]	210	-19.2 [-31]
12	-3.1 [-5]	112	-20.4 [-33]	212	-19.2 [-31]
14	-3.1 [-5]	114	-20.4 [-33]	214	-19.2 [-31]
16	-3.7 [-6]	116	-20.4 [-33]	216	-19.2 [-31]
18	-4.3 [-7]	118	-20.4 [-33]	218	-19.2 [-31]
20	-4.3 [-7]	120	-20.4 [-33]	220	-19.2 [-31]
22	-4.9 [-8]	122	-20.4 [-33]	222	-19.2 [-31]
24	-5.6 [-9]	124	-20.4 [-33]	224	-19.2 [-31]
26	-6.2 [-10]	126	-20.4 [-33]	226	-19.2 [-31]
28	-6.2 [-10]	128	-20.4 [-33]	228	-19.2 [-31]
30	-6.8 [-11]	130	-20.4 [-33]	230	-19.2 [-31]
32	-7.4 [-12]	132	-20.4 [-33]	232	-19.2 [-31]
34	-8.0 [-13]	134	-20.4 [-33]	234	-19.2 [-31]
36	-8.0 [-13]	136	-19.8 [-32]	236	-19.2 [-31]
38	-8.7 [-14]	138	-19.8 [-32]	238	-19.2 [-31]
40	-9.3 [-15]	140	-19.8 [-32]	240	-19.2 [-31]
42	-9.9 [-16]	142	-19.8 [-32]	242	-18.5 [-30]
44	-9.9 [-16]	144	-19.8 [-32]	244	-18.5 [-30]
46	-10.5 [-17]	146	-20.4 [-33]	246	-18.5 [-30]
48	-11.1 [-18]	148	-19.8 [-32]	248	-18.5 [-30]
50	-11.7 [-19]	150	-19.8 [-32]	250	0.0 [0]
52	-12.4 [-20]	152	-19.8 [-32]	252	0.0 [0]
54	-13.6 [-22]	154	-19.8 [-32]	254	0.0 [0]
56	-14.2 [-23]	156	-19.8 [-32]	256	0.0 [0]
58	-14.2 [-23]	158	-19.8 [-32]	258	0.0 [0]
60	-14.8 [-24]	160	-19.8 [-32]	260	0.0 [0]
62	-15.5 [-25]	162	-19.8 [-32]	262	0.0 [0]
64	-16.1 [-26]	164	-19.8 [-32]	264	0.0 [0]
66	-16.1 [-26]	166	-19.8 [-32]	266	0.0 [0]
68	-16.7 [-27]	168	-19.8 [-32]	268	0.0 [0]
70	-17.3 [-28]	170	-19.8 [-32]	270	0.0 [0]
72	-17.9 [-29]	172	-19.8 [-32]	272	0.0 [0]
74	-17.9 [-29]	174	-19.8 [-32]	274	0.0 [0]
76	-18.5 [-30]	176	-19.8 [-32]	276	0.0 [0]
78	-18.5 [-30]	178	-19.8 [-32]	278	0.0 [0]
80	-19.2 [-31]	180	-19.8 [-32]	280	0.0 [0]
82	-19.2 [-31]	182	-19.8 [-32]	282	0.0 [0]
84	-19.8 [-32]	184	-19.8 [-32]	284	0.0 [0]
86	-19.8 [-32]	186	-19.8 [-32]	286	0.0 [0]
88	-19.8 [-32]	188	-19.8 [-32]	288	0.0 [0]
90	-20.4 [-33]	190	-19.2 [-31]	290	0.0 [0]
92	-20.4 [-33]	192	-19.2 [-31]	292	0.0 [0]
94	-20.4 [-33]	194	-19.2 [-31]	294	0.0 [0]
96	-20.4 [-33]	196	-19.2 [-31]	296	0.0 [0]
98	-20.4 [-33]	198	-19.2 [-31]	298	0.0 [0]

Lateral Crash Pulse (Most Recent Event)

Time (msec)	Delta-V, Lateral (MPH [km/h])
0	0.0 [0]
2	0.0 [0]
4	0.6 [1]
6	0.6 [1]
8	1.3 [2]
10	1.3 [2]
12	0.0 [0]
14	0.6 [1]
16	0.6 [1]
18	0.6 [1]
20	0.6 [1]
22	0.6 [1]
24	0.6 [1]
26	0.6 [1]
28	0.6 [1]
30	1.3 [2]
32	1.3 [2]
34	1.3 [2]
36	1.3 [2]
38	1.3 [2]
40	1.3 [2]
42	0.6 [1]
44	1.3 [2]
46	1.3 [2]
48	1.3 [2]
50	0.6 [1]
52	0.6 [1]
54	0.6 [1]
56	0.6 [1]
58	0.6 [1]
60	0.6 [1]
62	0.0 [0]
64	0.0 [0]
66	0.0 [0]
68	0.0 [0]
70	0.0 [0]
72	-0.6 [-1]
74	-0.6 [-1]
76	-0.6 [-1]
78	-0.6 [-1]
80	-0.6 [-1]
82	-1.3 [-2]
84	-1.3 [-2]
86	-1.3 [-2]
88	-1.3 [-2]
90	-1.9 [-3]
92	-1.9 [-3]
94	-1.9 [-3]
96	-1.9 [-3]
98	-1.9 [-3]
100	-1.9 [-3]
102	-1.9 [-3]
104	-1.9 [-3]
106	-1.9 [-3]
108	-1.9 [-3]
110	-1.9 [-3]
112	-1.3 [-2]
114	-1.3 [-2]
116	-1.3 [-2]
118	-1.3 [-2]
120	-1.3 [-2]
122	-1.3 [-2]
124	-1.3 [-2]
126	-1.3 [-2]
128	-0.6 [-1]
130	-1.3 [-2]
132	-1.3 [-2]
134	-1.3 [-2]
136	-0.6 [-1]
138	-0.6 [-1]
140	-0.6 [-1]
142	-0.6 [-1]
144	-0.6 [-1]
146	-0.6 [-1]
148	-0.6 [-1]
150	-0.6 [-1]
152	-0.6 [-1]
154	-0.6 [-1]
156	-0.6 [-1]
158	-0.6 [-1]
160	-0.6 [-1]
162	-0.6 [-1]
164	-0.6 [-1]
166	-0.6 [-1]
168	-0.6 [-1]
170	-0.6 [-1]
172	-0.6 [-1]
174	-0.6 [-1]
176	-0.6 [-1]
178	-0.6 [-1]
180	-0.6 [-1]
182	-0.6 [-1]
184	-0.6 [-1]
186	-0.6 [-1]
188	-0.6 [-1]
190	-0.6 [-1]
192	-0.6 [-1]
194	-0.6 [-1]
196	-0.6 [-1]
198	-0.6 [-1]
200	0.0 [0]
202	0.0 [0]
204	0.0 [0]
206	0.0 [0]
208	0.0 [0]
210	0.0 [0]
212	0.0 [0]
214	0.0 [0]
216	0.0 [0]
218	0.0 [0]
220	0.0 [0]
222	0.0 [0]
224	0.0 [0]
226	0.0 [0]
228	0.0 [0]
230	0.0 [0]
232	0.0 [0]
234	0.0 [0]
236	0.0 [0]
238	0.0 [0]
240	0.0 [0]
242	0.0 [0]
244	0.0 [0]
246	0.0 [0]
248	0.0 [0]
250	0.0 [0]
252	0.0 [0]
254	0.0 [0]
256	0.0 [0]
258	0.0 [0]
260	0.0 [0]
262	0.0 [0]
264	0.0 [0]
266	0.0 [0]
268	0.0 [0]
270	0.0 [0]
272	0.0 [0]
274	0.0 [0]
276	0.0 [0]
278	0.0 [0]
280	0.0 [0]
282	0.0 [0]
284	0.0 [0]
286	0.0 [0]
288	0.0 [0]
290	0.0 [0]
292	0.0 [0]
294	0.0 [0]
296	0.0 [0]
298	0.0 [0]

Rollover Crash Pulse (Most Recent Event) (if equipped)

Time (msec)	Angular Rate (deg/sec)
-2500	3.26
-2480	3.26
-2460	3.26
-2440	3.26
-2420	3.26
-2400	0.00
-2380	0.00
-2360	0.00
-2340	3.26
-2320	3.26
-2300	3.26
-2280	3.26
-2260	3.26
-2240	3.26
-2220	3.26
-2200	3.26
-2180	3.26
-2160	3.26
-2140	3.26
-2120	3.26
-2100	3.26
-2080	3.26
-2060	3.26
-2040	3.26
-2020	3.26
-2000	3.26
-1980	0.00
-1960	0.00
-1940	0.00
-1920	0.00
-1900	0.00
-1880	0.00
-1860	0.00
-1840	0.00
-1820	0.00
-1800	0.00
-1780	0.00
-1760	0.00
-1740	0.00
-1720	-3.26
-1700	-3.26
-1680	-3.26
-1660	-3.26
-1640	0.00
-1620	-3.26
-1600	0.00
-1580	3.26
-1560	9.77
-1540	16.29
-1520	22.80

Time (msec)	Angular Rate (deg/sec)
-1500	19.55
-1480	9.77
-1460	0.00
-1440	-6.52
-1420	-9.77
-1400	-13.03
-1380	-16.29
-1360	-16.29
-1340	-13.03
-1320	-6.52
-1300	-3.26
-1280	3.26
-1260	9.77
-1240	13.03
-1220	13.03
-1200	13.03
-1180	13.03
-1160	13.03
-1140	9.77
-1120	9.77
-1100	9.77
-1080	9.77
-1060	9.77
-1040	13.03
-1020	13.03
-1000	13.03
-980	16.29
-960	16.29
-940	13.03
-920	9.77
-900	6.52
-880	3.26
-860	0.00
-840	0.00
-820	-3.26
-800	-6.52
-780	-6.52
-760	-6.52
-740	-6.52
-720	-3.26
-700	0.00
-680	0.00
-660	0.00
-640	0.00
-620	0.00
-600	6.52
-580	6.52
-560	3.26
-540	6.52
-520	6.52

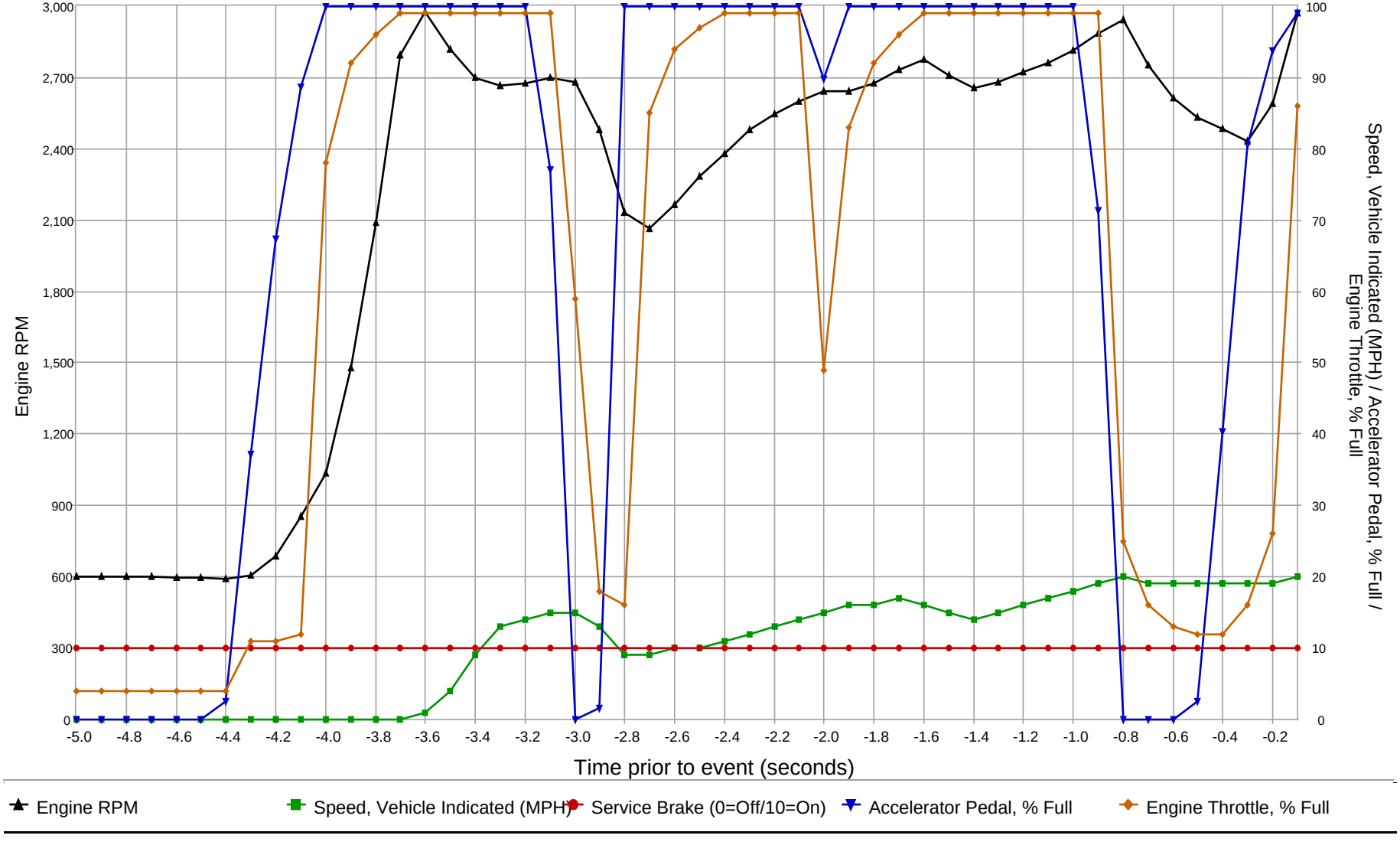
Time (msec)	Angular Rate (deg/sec)
-500	3.26
-480	0.00
-460	-3.26
-440	-9.77
-420	-13.03
-400	-13.03
-380	-13.03
-360	-9.77
-340	-6.52
-320	-3.26
-300	3.26
-280	3.26
-260	3.26
-240	3.26
-220	6.52
-200	0.00
-180	0.00
-160	0.00
-140	0.00
-120	0.00
-100	3.26
-80	6.52
-60	6.52
-40	6.52
-20	6.52
0	6.52
20	-78.18
40	16.29
60	6.52
80	45.61
100	61.89
120	29.32
140	-58.64
160	-45.61
180	-55.38
200	-58.64
220	-48.86
240	-42.35
260	-39.09
280	-29.32
300	-19.55
320	-9.77
340	-6.52
360	0.00
380	6.52
400	13.03
420	16.29
440	16.29
460	19.55
480	22.80

Rollover Crash Pulse (Most Recent Event) (if equipped)

Time (msec)	Angular Rate (deg/sec)
500	22.80
520	22.80
540	16.29
560	16.29
580	9.77
600	6.52
620	13.03
640	19.55
660	22.80
680	26.06
700	26.06
720	26.06
740	22.80
760	16.29
780	6.52
800	0.00
820	-6.52
840	-16.29
860	-19.55
880	-22.80
900	-22.80
920	-22.80
940	-26.06
960	-19.55
980	-19.55
1000	-16.29
1020	-13.03
1040	-9.77
1060	-6.52
1080	-3.26
1100	0.00
1120	0.00
1140	3.26
1160	6.52
1180	6.52
1200	9.77
1220	13.03
1240	13.03
1260	13.03
1280	13.03
1300	13.03
1320	13.03
1340	9.77
1360	6.52
1380	3.26
1400	3.26
1420	0.00
1440	-3.26
1460	-3.26
1480	-6.52

Time (msec)	Angular Rate (deg/sec)
1500	-6.52
1520	-9.77
1540	-9.77
1560	-9.77
1580	-9.77
1600	-9.77
1620	-9.77
1640	-6.52
1660	-6.52
1680	-3.26
1700	-3.26
1720	0.00
1740	0.00
1760	3.26
1780	3.26
1800	6.52
1820	6.52
1840	6.52
1860	6.52
1880	6.52
1900	6.52
1920	6.52
1940	6.52
1960	3.26
1980	3.26
2000	3.26
2020	0.00
2040	0.00
2060	0.00
2080	-3.26
2100	-3.26
2120	-3.26
2140	-3.26
2160	-3.26
2180	-3.26
2200	-3.26
2220	-3.26
2240	-3.26
2260	0.00
2280	0.00
2300	0.00
2320	0.00
2340	3.26
2360	3.26
2380	3.26
2400	3.26
2420	3.26

Pre-Crash Data (Most Recent Event)



SNA values will not be plotted on the graph

Pre-Crash Data (Most Recent Event - table 1 of 5)

(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	Brake Lamps On
-5.0	Complete	600	0 [0]	4	0.0	30	On	Closed	Yes
-4.9	Complete	601	0 [0]	4	0.0	30	On	Closed	Yes
-4.8	Complete	599	0 [0]	4	0.0	30	On	Closed	Yes
-4.7	Complete	600	0 [0]	4	0.0	30	On	Closed	Yes
-4.6	Complete	597	0 [0]	4	0.0	30	On	Closed	Yes
-4.5	Complete	594	0 [0]	4	0.0	30	On	Closed	Yes
-4.4	Complete	590	0 [0]	4	2.6	30	On	Closed	Yes
-4.3	Complete	606	0 [0]	11	37.6	34	On	Closed	Yes
-4.2	Complete	688	0 [0]	11	68.0	46	On	Closed	Yes
-4.1	Complete	852	0 [0]	12	89.7	53	On	Closed	Yes
-4.0	Complete	1,036	0 [0]	78	100.0	101	On	Closed	Yes
-3.9	Complete	1,480	0 [0]	92	100.0	100	On	Closed	Yes
-3.8	Complete	2,087	0 [0]	96	100.0	100	On	Closed	Yes
-3.7	Complete	2,797	0 [0]	99	100.0	99	On	Closed	Yes
-3.6	Complete	2,976	1 [1]	99	100.0	99	On	Closed	Yes
-3.5	Complete	2,818	4 [6]	99	100.0	99	On	Closed	Yes
-3.4	Complete	2,700	9 [15]	99	100.0	99	On	Closed	Yes
-3.3	Complete	2,668	13 [21]	99	100.0	99	On	Closed	Yes
-3.2	Complete	2,674	14 [23]	99	100.0	99	On	Closed	Yes
-3.1	Complete	2,700	15 [24]	99	77.8	99	On	Closed	Yes
-3.0	Complete	2,681	15 [24]	59	0.0	86	On	Closed	Yes
-2.9	Complete	2,478	13 [21]	18	1.5	62	On	Closed	Yes
-2.8	Complete	2,130	9 [15]	16	100.0	51	On	Closed	Yes
-2.7	Complete	2,065	9 [14]	85	100.0	100	On	Closed	Yes
-2.6	Complete	2,164	10 [16]	94	100.0	100	On	Closed	Yes
-2.5	Complete	2,283	10 [17]	97	100.0	100	On	Closed	Yes
-2.4	Complete	2,380	11 [18]	99	100.0	100	On	Closed	Yes
-2.3	Complete	2,479	12 [19]	99	100.0	99	On	Closed	Yes
-2.2	Complete	2,549	13 [21]	99	100.0	99	On	Closed	Yes
-2.1	Complete	2,598	14 [22]	99	100.0	99	On	Closed	Yes
-2.0	Complete	2,643	15 [24]	49	90.7	97	On	Closed	Yes
-1.9	Complete	2,644	16 [25]	83	100.0	99	On	Closed	Yes
-1.8	Complete	2,675	16 [26]	92	100.0	99	On	Closed	Yes
-1.7	Complete	2,731	17 [27]	96	100.0	99	On	Closed	Yes
-1.6	Complete	2,774	16 [26]	99	100.0	99	On	Closed	Yes
-1.5	Complete	2,708	15 [24]	99	100.0	99	On	Closed	Yes
-1.4	Complete	2,657	14 [23]	99	100.0	99	On	Closed	Yes
-1.3	Complete	2,679	15 [25]	99	100.0	99	On	Closed	Yes
-1.2	Complete	2,721	16 [26]	99	100.0	99	On	Closed	Yes
-1.1	Complete	2,761	17 [27]	99	100.0	99	On	Closed	Yes
-1.0	Complete	2,815	18 [29]	99	100.0	99	On	Closed	Yes
-0.9	Complete	2,886	19 [31]	99	72.2	99	On	Closed	Yes
-0.8	Complete	2,943	20 [32]	25	0.0	85	On	Closed	Yes
-0.7	Complete	2,751	19 [31]	16	0.0	60	On	Closed	Yes
-0.6	Complete	2,612	19 [31]	13	0.0	46	On	Closed	Yes
-0.5	Complete	2,531	19 [31]	12	2.6	38	On	Closed	Yes
-0.4	Complete	2,485	19 [31]	12	40.7	33	On	Closed	Yes
-0.3	Complete	2,434	19 [30]	16	81.4	39	On	Closed	Yes
-0.2	Complete	2,592	19 [30]	26	94.8	98	On	Closed	Yes
-0.1	Complete	2,970	20 [32]	86	100.0	99	On	Closed	Yes

Pre-Crash Data (Most Recent Event - table 2 of 5)

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

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

Pre-Crash Data (Most Recent Event - table 3 of 5)

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

Time Stamp (sec)	Steering Input (deg) (if equip.)	Yaw Rate (deg/sec) (if equip.)	Wheel Speed LF (RPM) (if equip.)	Wheel Speed RF (RPM) (if equip.)	Wheel Speed LR (RPM) (if equip.)	Wheel Speed RR (RPM) (if equip.)
-5.0	153	0	0	0	0	0
-4.9	153	0	0	0	0	0
-4.8	153	0	0	0	0	0
-4.7	153	0	0	0	0	0
-4.6	153	0	0	0	0	0
-4.5	153	0	0	0	0	0
-4.4	153	0	0	0	0	0
-4.3	154	0	0	0	0	0
-4.2	154	0	0	0	0	0
-4.1	156	0	0	0	0	0
-4.0	156	0	0	0	0	0
-3.9	156	0	0	0	0	0
-3.8	156	0	0	0	0	0
-3.7	156	0	0	0	0	0
-3.6	156	0	0	0	6	12
-3.5	156	0	14	0	24	122
-3.4	154	3	31	34	40	257
-3.3	152	7	40	46	43	270
-3.2	152	7	52	58	51	287
-3.1	153	7	63	69	62	289
-3.0	160	7	75	82	71	285
-2.9	178	10	84	93	82	210
-2.8	233	13	94	105	103	114
-2.7	294	17	101	115	99	114
-2.6	319	24	107	125	106	124
-2.5	344	29	114	136	113	136
-2.4	354	32	122	146	120	146
-2.3	354	35	131	157	130	155
-2.2	339	37	140	168	140	165
-2.1	316	38	148	177	153	176
-2.0	291	38	158	187	162	186
-1.9	265	37	168	196	173	195
-1.8	230	36	177	204	179	203
-1.7	208	33	186	212	191	212
-1.6	206	8	164	171	191	187
-1.5	206	11	151	163	150	197
-1.4	218	27	156	180	157	179
-1.3	223	31	167	191	169	192
-1.2	246	28	176	199	185	200
-1.1	261	29	185	210	192	208
-1.0	272	33	192	220	209	218
-0.9	274	38	198	228	228	229
-0.8	271	40	205	238	223	240
-0.7	268	39	211	245	212	239
-0.6	258	36	212	244	214	241
-0.5	240	32	203	236	216	236
-0.4	204	31	212	235	212	236
-0.3	198	32	212	241	210	233
-0.2	208	32	211	236	210	236
-0.1	208	31	210	237	223	243

Pre-Crash Data (Most Recent Event - table 4 of 5)

(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	PRND Status	Reverse Gear (Manual Only)	Cruise Control System	Cruise Control Active
-5.0	Off	No	No	Park	No	Off	No
-4.9	Off	No	No	Park	No	Off	No
-4.8	Off	No	No	Park	No	Off	No
-4.7	Off	No	No	Park	No	Off	No
-4.6	Off	No	No	Park	No	Off	No
-4.5	Off	No	No	Park	No	Off	No
-4.4	Off	No	No	Neutral	No	Off	No
-4.3	Off	No	Yes	Reverse	Yes	Off	No
-4.2	Off	No	No	Neutral	No	Off	No
-4.1	Off	No	No	Neutral	No	Off	No
-4.0	Off	No	No	Neutral	No	Off	No
-3.9	Off	No	Yes	Drive	No	Off	No
-3.8	Off	No	Yes	Drive	No	Off	No
-3.7	Off	No	Yes	Drive	No	Off	No
-3.6	Off	No	Yes	Drive	No	Off	No
-3.5	Off	No	Yes	Drive	No	Off	No
-3.4	Off	No	Yes	Drive	No	Off	No
-3.3	Off	No	Yes	Drive	No	Off	No
-3.2	Off	No	Yes	Drive	No	Off	No
-3.1	Off	No	Yes	Drive	No	Off	No
-3.0	Off	No	Yes	Drive	No	Off	No
-2.9	Off	No	Yes	Drive	No	Off	No
-2.8	Off	No	Yes	Drive	No	Off	No
-2.7	Off	No	Yes	Drive	No	Off	No
-2.6	Off	No	Yes	Drive	No	Off	No
-2.5	Off	No	Yes	Drive	No	Off	No
-2.4	Off	No	Yes	Drive	No	Off	No
-2.3	Off	No	Yes	Drive	No	Off	No
-2.2	Off	No	Yes	Drive	No	Off	No
-2.1	Off	No	Yes	Drive	No	Off	No
-2.0	Off	No	Yes	Drive	No	Off	No
-1.9	Off	No	Yes	Drive	No	Off	No
-1.8	Off	No	Yes	Drive	No	Off	No
-1.7	Off	No	Yes	Drive	No	Off	No
-1.6	Off	No	Yes	Drive	No	Off	No
-1.5	Off	No	Yes	Drive	No	Off	No
-1.4	Off	No	Yes	Drive	No	Off	No
-1.3	Off	No	Yes	Drive	No	Off	No
-1.2	Off	No	Yes	Drive	No	Off	No
-1.1	Off	No	Yes	Drive	No	Off	No
-1.0	Off	No	Yes	Drive	No	Off	No
-0.9	Off	No	Yes	Drive	No	Off	No
-0.8	Off	No	Yes	Drive	No	Off	No
-0.7	Off	No	Yes	Drive	No	Off	No
-0.6	Off	No	Yes	Drive	No	Off	No
-0.5	Off	No	Yes	Drive	No	Off	No
-0.4	Off	No	Yes	Drive	No	Off	No
-0.3	Off	No	Yes	Drive	No	Off	No
-0.2	Off	No	Yes	Drive	No	Off	No
-0.1	Off	No	Yes	Drive	No	Off	No

Pre-Crash Data (Most Recent Event - table 5 of 5)

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

Time Stamp (sec)	Tire Pressure Monitor Faults (if equip.)	Tire 1 Location (if equip.)	Tire 1 Pressure Status (if equip.)	Tire 1 Pressure (psi) (if equip.)	Tire 2 Location (if equip.)	Tire 2 Pressure Status (if equip.)	Tire 2 Pressure (psi) (if equip.)
-5.0	No	LF	Normal	37	LR	Normal	38
-4.9	No	LF	Normal	37	LR	Normal	38
-4.8	No	LF	Normal	37	LR	Normal	38
-4.7	No	LF	Normal	37	LR	Normal	38
-4.6	No	LF	Normal	37	LR	Normal	38
-4.5	No	LF	Normal	37	LR	Normal	38
-4.4	No	LF	Normal	37	LR	Normal	38
-4.3	No	LF	Normal	37	LR	Normal	38
-4.2	No	LF	Normal	37	LR	Normal	38
-4.1	No	LF	Normal	37	LR	Normal	38
-4.0	No	LF	Normal	37	LR	Normal	38
-3.9	No	LF	Normal	37	LR	Normal	38
-3.8	No	LF	Normal	37	LR	Normal	38
-3.7	No	LF	Normal	37	LR	Normal	38
-3.6	No	LF	Normal	37	LR	Normal	38
-3.5	No	LF	Normal	37	LR	Normal	38
-3.4	No	LF	Normal	37	LR	Normal	38
-3.3	No	LF	Normal	37	LR	Normal	38
-3.2	No	LF	Normal	37	LR	Normal	38
-3.1	No	LF	Normal	37	LR	Normal	38
-3.0	No	LF	Normal	37	LR	Normal	38
-2.9	No	LF	Normal	37	LR	Normal	38
-2.8	No	LF	Normal	37	LR	Normal	38
-2.7	No	LF	Normal	37	LR	Normal	38
-2.6	No	LF	Normal	37	LR	Normal	38
-2.5	No	LF	Normal	37	LR	Normal	38
-2.4	No	LF	Normal	37	LR	Normal	38
-2.3	No	LF	Normal	37	LR	Normal	38
-2.2	No	LF	Normal	37	LR	Normal	38
-2.1	No	LF	Normal	37	LR	Normal	38
-2.0	No	LF	Normal	37	LR	Normal	38
-1.9	No	LF	Normal	37	LR	Normal	38
-1.8	No	LF	Normal	37	LR	Normal	38
-1.7	No	LF	Normal	37	LR	Normal	38
-1.6	No	LF	Normal	37	LR	Normal	38
-1.5	No	LF	Normal	37	LR	Normal	38
-1.4	No	LF	Normal	37	LR	Normal	38
-1.3	No	LF	Normal	37	LR	Normal	38
-1.2	No	LF	Normal	37	LR	Normal	38
-1.1	No	LF	Normal	37	LR	Normal	38
-1.0	No	LF	Normal	37	LR	Normal	38
-0.9	No	LF	Normal	37	LR	Normal	38
-0.8	No	LF	Normal	37	LR	Normal	38
-0.7	No	LF	Normal	37	LR	Normal	38
-0.6	No	LF	Normal	37	LR	Normal	38
-0.5	No	LF	Normal	37	LR	Normal	38
-0.4	No	LF	Normal	37	LR	Normal	38
-0.3	No	LF	Normal	37	LR	Normal	38
-0.2	No	LF	Normal	37	LR	Normal	38
-0.1	No	LF	Normal	37	LR	Normal	38

Hexadecimal Data

Data that the vehicle manufacturer has specified for data retrieval is shown in the hexadecimal data section of the CDR report. The hexadecimal data section of the CDR report may contain data that is not translated by the CDR program. The control module contains additional data that is not retrievable by the CDR system.

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5A 87 02 27 03 05 FF 0C 1C 0C 07 01 36 38 31 34 38 30 34 37 41 43

5A 88 31 4A 34 50 4E 32 47 4B 31 42 57 2A 2A 2A 2A 2A 2A

61 E1 54 52 4C 4D 46 32 34 31 33 30 31 35 33 39

61 EA 04 18 02 DB 60 90 00 01 38 00 00 00 00 00 00 00 00 00 00

61 02 03 65 00 00 62 12 18 00 00 00 20 00 00 00 00 00 00 00 00

61 31 01 CC 01 01 10 00 00 12 39 12 4D 72 24 2E 80 00 00 1A A3 19 A9 7B 00 21 5A 03 59 0B 00
00 00 00 00 00 00 00 00 00 00 00 80 00 03 00 00 00 1E 00 00 00 00 0C 07 01 62 9B 02 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 00
00 00 42 57 2A 2A 2A 2A 2A 2A

61 32 02 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF 2A 2A 2A 2A 2A 2A

71 02 01 00 CC 00 0B 9A 08 01 E6 01 BD 01 A4 01 D9 8C 78 00 01 00 01 00 D3 2D E2 71 7C A9 C2
CC 00 32 00 01 25 03 26 00 00 00 11 A0 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F E4
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 01 CC 00 0A 20 08 01 D7 01 A3 01 A5 01 D7 8C B4 00 01 00 01 00 B3 4D D8 6C 7B 32 B8
CC 00 32 00 01 25 03 26 00 00 00 11 A0 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 37
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 02 CC 00 09 82 08 01 D2 01 A4 01 A8 01 E2 8C D8 00 01 00 01 00 3F C0 C9 64 31 1F 9E
CC 00 32 00 01 25 03 26 00 00 00 11 8C 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 1A
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 03 CC 00 09 B5 08 01 D8 01 A8 01 A7 01 D5 8C 30 00 01 00 01 00 33 CC 81 41 29 17 4F
CC 00 32 00 01 25 03 26 00 00 00 11 98 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 4C
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 04 CC 00 09 E3 08 01 D8 01 B0 01 95 01 D8 8C D8 00 01 00 01 00 31 CD 2D 16 2F 18 05
CC 00 32 00 01 25 03 26 00 00 00 11 E1 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 7F
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 05 CC 00 0A 34 08 01 E1 01 AB 01 A8 01 E8 8E 28 00 01 00 01 00 34 CB 16 0A 39 1A 00
CC 00 32 00 01 25 03 26 00 00 00 12 05 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 8D
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 06 CC 00 0A BF 08 01 DD 01 A8 01 A5 01 E9 8F 9C 00 01 00 01 00 38 C7 16 0A 4B 1F 00
CC 00 32 00 01 25 03 26 00 00 00 12 19 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 78
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 07 CC 00 0B 7F 08 01 E0 01 BE 01 99 01 DB 8F D8 00 01 00 01 00 47 B8 16 0A 6A 31 00
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CC 00 32 00 01 25 03 26 00 00 00 12 1F 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F DC
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 08 CC 00 0B 46 08 01 C9 01 C8 01 8B 01 C8 8E E8 00 01 00 01 00 D4 2B 66 33 7C C2 8C
CC 00 32 00 01 25 03 26 00 00 00 12 24 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0F 94
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 09 CC 00 0A FF 08 01 B3 01 A2 01 7F 01 B7 8D 44 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 21 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0E 8A
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0A CC 00 0A C9 88 01 A0 01 80 01 71 01 A3 8B AC 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 0B 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0D AB
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0B CC 00 0A A1 88 01 90 01 72 01 60 01 8E 8B 4C 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 11 EC 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0D 1B
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0C CC 00 0A 77 88 01 7F 01 52 01 4E 01 7E 8C 3C 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 11 BF 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0C 43
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0D CC 00 0A 61 88 01 66 01 39 01 37 01 67 8A C8 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 11 B4 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0B 72
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0E CC 00 0A 94 88 01 89 01 2C 01 2E 01 45 84 98 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 11 9D 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0B DE
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 0F CC 00 0A D6 08 01 75 01 7D 01 48 01 56 83 78 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 11 9D 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0C F7
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 10 CC 00 0A AB 08 01 A8 01 7D 01 74 01 A8 8C F0 00 01 00 01 00 DE 22 E8 74 7C BD C4
CC 00 32 00 01 25 03 26 00 00 00 11 A0 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0D B2
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 11 CC 00 0A 73 08 01 96 01 65 01 61 01 98 8E 1C 00 01 00 01 00 D6 2A E8 74 7C B4 C4
CC 00 32 00 01 25 03 26 00 00 00 11 CD 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0D 0C
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 12 CC 00 0A 54 08 01 85 01 59 01 4F 01 88 8E 94 00 01 00 01 00 C9 36 E8 74 7C A2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 13 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0C 84
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 13 CC 00 0A 53 08 01 73 01 43 01 3B 01 76 8E E8 00 01 00 01 00 78 87 E8 74 79 60 B0
CC 00 32 00 01 25 03 26 00 00 00 12 46 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0B D7
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 14 CC 00 0A 26 08 01 60 01 31 01 28 01 62 8E DC 00 01 00 01 00 DE 22 B8 5B 7C C2 C4
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CC 00 32 00 01 25 03 26 00 00 00 12 79 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0B 2A
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 15 CC 00 09 F5 08 01 4A 01 18 01 18 01 4F 8E 94 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 A6 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0A 59
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 16 CC 00 09 AF 08 01 36 01 03 01 05 01 3A 8D BC 00 01 00 01 00 DE 22 E8 74 7C C2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 C5 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 09 B4
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 17 CC 00 09 4C 08 01 23 00 F0 00 F4 01 24 8C 9C 00 01 00 01 00 DE 22 E8 74 7D C2 C4
CC 00 32 00 01 25 03 26 00 00 00 12 C5 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 09 07
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 18 CC 00 08 EB 08 01 0F 00 E2 00 E3 01 0F 8B 64 00 01 00 01 00 DE 22 E8 74 7D BF C4
CC 01 32 00 01 25 03 26 00 00 00 12 B1 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 08 70
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 19 CC 00 08 74 08 00 F8 00 D4 00 D5 00 FA 89 78 00 01 00 01 00 D9 27 E8 74 7D B8 C4
CC 01 32 00 01 25 03 26 00 00 00 12 7E 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 07 D1
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 1A CC 00 08 11 08 00 E3 00 C6 00 CA 00 E5 86 D8 00 01 00 01 00 CD 33 E8 74 7D A7 C4
CC 01 32 00 01 25 03 26 00 00 00 12 4C 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 07 33
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 1B CC 00 08 52 08 00 E4 00 CD 00 BC 00 D1 85 70 00 01 00 01 00 50 AF E8 74 40 1F C4
CC 01 32 00 01 25 03 26 00 00 00 11 D3 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 07 50
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 1C CC 00 09 AE 08 01 A3 00 A3 00 A8 00 BA 84 44 00 01 00 01 00 36 C9 79 3C 4D 23 03
CC 01 32 00 01 25 03 26 00 00 00 11 65 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0A 52
02 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00

71 02 01 1D CC 00 0A 79 08 02 39 00 8E 00 95 00 A3 83 18 00 01 00 01 00 45 BA 16 0A 6C 73 00
CC 01 32 00 01 25 03 26 00 00 00 11 40 00 F8 FF 00 80 FF 07 3F 00 FF FF FF 00 00 00 00 0C 1F
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U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

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