
Blue Ribbon Panel Public Meeting

NHTSA's Programs for Collecting Data on the Performance of Certified Advanced Compliant Air Bag Equipped Vehicles in Real World Frontal Crashes

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Augustus "Chip" Chidester
Chief, Crash Investigations Division
National Center for Statistics and Analysis



Topics

- **NCSA Field Data Collection Efforts**
- **Notification Sources**
- **Certified Advanced 208 Compliant Efforts**
- **Case Data**
- **Importance of EDR**
- **Summary**



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NCSA Field Data Collection Efforts

- **Special Crash Investigations (SCI)**
- **National Automotive Sampling System**
 - **Crashworthiness Data System**
 - 24 CDS PSU's
 - 3 Alliance PSU's
 - (Ending April 2005)

Notifications

- **SCI Teams**
- **NASS Teams**
 - **CDS (Out of Sample)**
 - **GES**
- **Law Enforcement**
- **FARS**
- **Insurance Companies (Nationwide)**
- **Etc.**



Objectives of the Certified Advanced 208 Compliant Investigations

- Examine safety impact of rapidly changing technology in airbags
- Provide data to the Agency to assess the “real world” performance of these vehicles



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Objectives of the Certified Advanced 208 Compliant Investigations

- Work with manufacturers to learn specifics of system technologies
- Pursue cases covering a wide range of crash scenarios



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Certified Advanced 208 Compliant Vehicles

Research Priorities:

- **Involve a CAC Vehicle**
- **No deployment criteria**
 - Research both deployments and non-deployments

Focus on:

- System performance
- Air bag related injuries
- Out-of-position occupants
- Small statured adults
- Children
- Higher speed crashes (belted and unbelted)
- Unusual circumstances
 - with early identification of potential problems.



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Minimum Criteria for CAC Case Selection

- 2003 or newer model year vehicle
- Certified Advanced 208 Compliant vehicle involved
- Vehicle available for inspection



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Event Data Recorder (EDR) Information in CAC Vehicles

Currently our Field Investigators
can download EDR data from:

- Most General Motors Products
- Some Ford Products

However - -

- Only some pickups and sport utilities are CAC Compliant
- No downloadable Ford products are currently CAC compliant



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CAC Cases to Date

Since 2003 - - SCI has initiated 65 CAC cases

In these cases:

- No fatalities or serious injuries have been associated with the air bag(s)
- Mixture of:
 - Deployments
 - Non-deployments
 - Split deployments
 - Single stage (most)
 - Two stage air bag deployments (some)

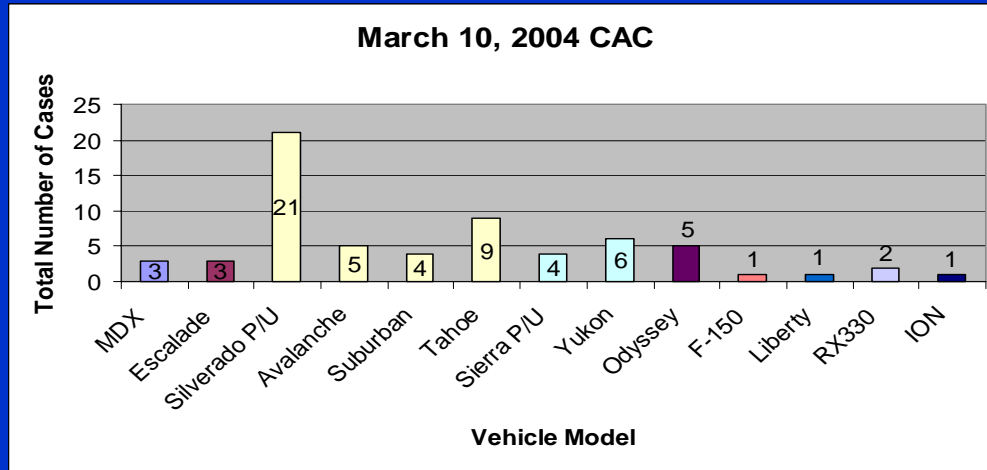


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Cases to Date



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NHTSA Findings on Air Bag

- Data Published Quarterly on NHTSA Web site:
 - Crashes involving air bag deployment related fatal and seriously injured occupants with a delta V less than 25 mph
 - Redesigned Air Bags
 - Side Air Bags
 - CAC Air Bags



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Sample CAC Case

- Case Vehicle: 2003 Chevrolet K1500 Silverado ext cab pickup
- Other Vehicle: 1997 Honda Accord
- Crash Configuration: Two vehicle/ Four leg Intersection
- Occupant: Driver Only
- Injury Severity: Driver – Minor injury
AIS-1 -Abrasions to his left forearm

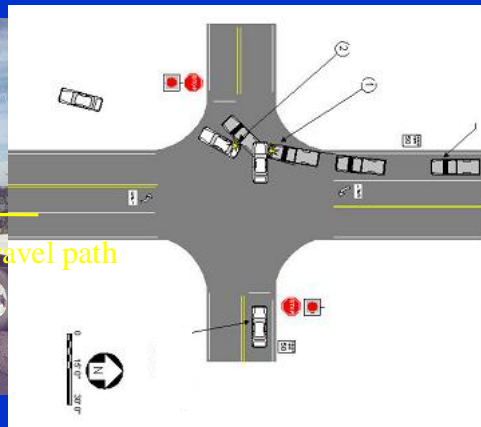


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Approach



Other vehicle travel path



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Case Vehicle Data

- 12-FYEW-1
- Stage 1 DAB
- No PAB deployment
- WinSmash delta V
 - -8.7 MPH
- EDR recorded delta V
 - -7.02 MPH



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Other Vehicle

- 1997 Honda Accord
- 03RYAW2
- 14.3 mph Delta V



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Case Vehicle Driver Data

- 48 y/o male
- Unknown ht/wt
- No safety belt use
- Driver air bag Stage 1 deployment
- AIS-1 left wrist abrasion
 - Air bag



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Case Vehicle Passenger Data

- NOT Occupied
- Passenger air bag non-deployed
- Shut off switch set to "Auto"
- System sensed no occupant in RF seat and suppressed the passenger bag



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CDR File Information

Vehicle Identification Number	2GCEK19T931xxxxx
Investigator	
Case Number	
Investigation Date	
Crash Date	
Filename	DS03006.CDR
Saved on	02/25/2003 8:12:53 AM
Data check information	F316BD0F
Collected with CDR version	Crash Data Retrieval Tool 2.00
Collecting program verification number	A31D1C76
Reported with CDR version	Crash Data Retrieval Tool 2.00
Reporting program verification number	A31D1C76
Event(s) recovered	Deployment

System Status At Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	UNBUCKLED
Ignition Cycles At Deployment	1714
Ignition Cycles At Investigation	1719
Maximum SDM Recorded Velocity Change (MPH)	-7.02
Algorithm Enable to Maximum SDM Recorded Velocity Change (msec)	112.5
Driver First Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	17.5
Driver Second Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	N/A
Passenger First Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	N/A
Passenger Second Stage Time Algorithm Enabled to Deployment Command Criteria Met (msec)	N/A
Time Between non-Deployment And Deployment Events (sec)	N/A
Frontal Deployment Level Event Counter	1
Event Recording Complete	Yes
Multiple Events Associated With This Record	No
One Or More Associated Events Not Recorded	No

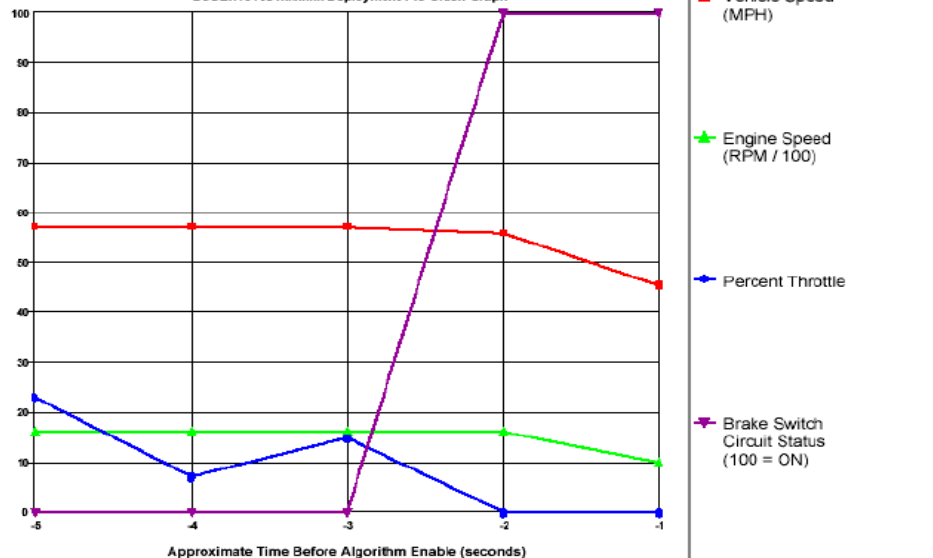


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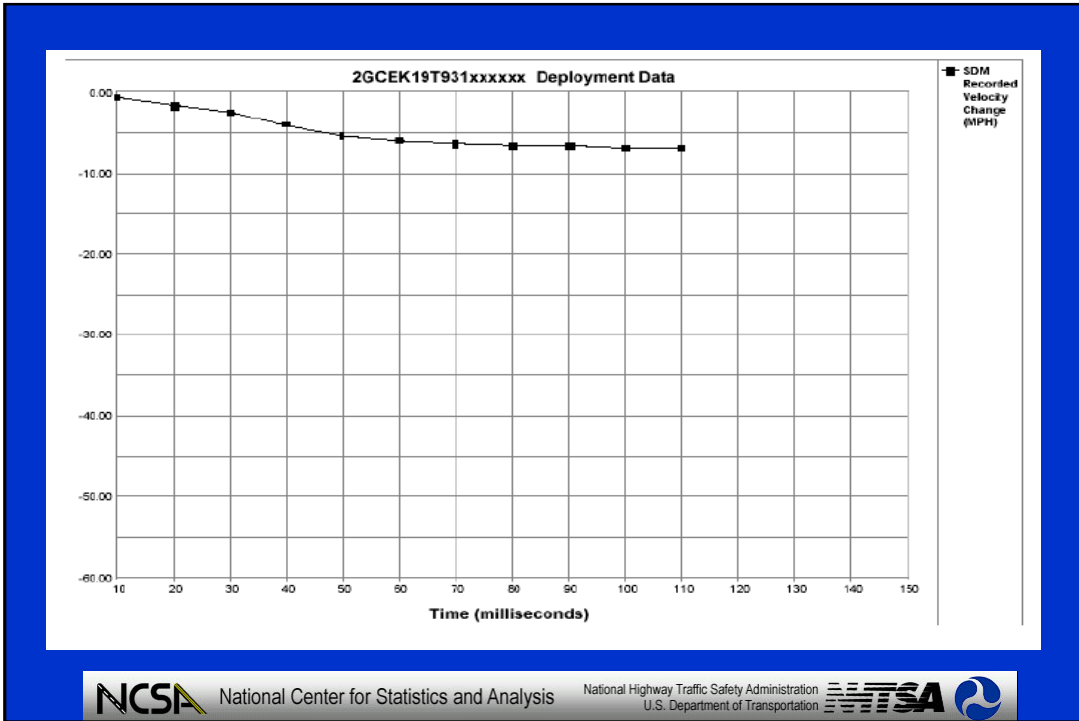
2GCEK19T931xxxxx Deployment Pre-Crash Graph



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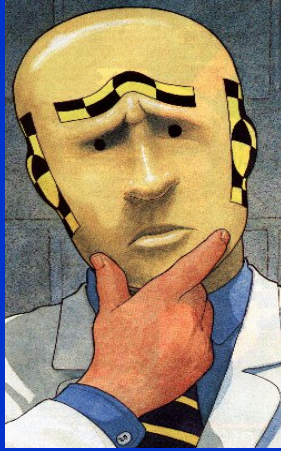


What We Have Learned: EDR Data Collection

- The most effective method to observe and / or measure and confirm the performance of CAC Safety System Features is through the EDR data!

Frontal Impacts

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Questions?