



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

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AUTO SAFETY HOTLINE  
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**Information Dynamics, Inc.  
Washington, DC 20590**

**Report Date:**

**[REDACTED] 1996**

**Revised\***

**[REDACTED] 1997**

**Information Dynamics, Inc. Remote Air Bag Deployment Investigation**

**Information Dynamics, Inc. Case Number 95-01 (ID9501)**

**Vehicle Number 1 - 1995 Toyota Camry LE 4 Door**

**VIN [REDACTED]**

**Vehicle Number 2 - 1989 Chrysler LeBaron 2 Door**

**VIN [REDACTED]**

**Location - [REDACTED]**

**Crash Date - [REDACTED] 1994**

**Contract No. DTNH22-94-R-07257**

**Prepared for:**

**United States Department Of Transportation  
National Highway Traffic Safety Administration  
Washington D. C. 20590**

**\* Vehicle #1 corrected from Avalon to Camry, VIN Corrected 5 to S**

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

## **Information Dynamics, Inc. Remote Air Bag Deployment Investigation**

**Information Dynamics, Inc. Case Number 95-01 (ID9501)**

**Vehicle Number 1 - 1995 Toyota Camry LE 4 Door**

**VIN 4T15K12E6SU**

**Vehicle Number 2 - 1989 Chrysler LeBaron 2 Door**

**VIN 1C3XJ41J4KG**

**Location - Mississippi**

**Crash Date - [REDACTED] 1994**

### **Summary:**

An angle two vehicle crash involving the front of a 1995 Toyota Camry LE (vehicle #1) and the right side a 1989 Chrysler LeBaron (vehicle #2) occurred in a city in Mississippi on a [REDACTED] in [REDACTED] 1994 at [REDACTED] hours. The crash occurred on a six lane, divided, (two through lanes and one left turn bays in each direction) dry asphalt roadway surface at a four leg intersection. The area was illuminated with street lighting. The intersection was controlled by an on-colors traffic control light.

The 1995 Toyota Camry LE was proceeding south in the second through lane (2nd from curb) of the six lane divided roadway. The 1989 Chrysler LeBaron was preceding north in the left turn bay in the opposite direction on the same six lane divided roadway. The 1989 Chrysler LeBaron made a left turn against the red light to proceed west. The 1995 Toyota Camry LE made a braking avoidance action which resulted in tire skid marks. The front of the Toyota struck the right side of the Chrysler. The police accident report diagram notes the final rest of the Toyota near the point of impact, while Chrysler was spun clockwise almost 180 degrees. The Toyota was towed from the scene. The Chrysler was driven from the scene.

The 1995 Toyota Camry LE was equipped with a driver and passenger side air bag system which deployed at impact. The driver of the Toyota was a 38 year old female. The only passenger was a 6 year old female seated in the front right position. The police accident report noted that neither of the occupants of the 1995 Toyota Camry LE were restrained with the available lap and shoulder belts. The front right occupant slid forward off the seat during the braking evasive maneuver and contacted the passenger side air bag module cover as the air bag began to deploy. The air bag module cover flap contacted her face resulting in severe closed head injuries (see photo #2).

The 1989 Chrysler LeBaron was equipped with a driver side air bag system which did not deploy at impact. The driver of the Chrysler was a 15 year old female. The only passenger was a 15 year old male seated in the front right position. The police accident report noted that both of the occupants of the LeBaron were restrained with the available lap and shoulder belts.

The local police witnessed the crash and were on scene immediately. Rescue arrived within 8 minutes and transported the girl to a local hospital via ambulance where she expired 6 hours later.

### **Vehicle Number 1 - 1995 Toyota Camry LE 4 Door**

Vehicle number one was a 1995 Toyota Camry LE 4 door VIN 4T1SK12E6SU equipped with a driver and passenger side air bag system. The Toyota was towed from the scene to a local repair facility. Photographs were taken of the damaged Toyota, by the local police department, at the repair facility. At the request of this investigator, the Fatal Accident Reporting System (FARS) secured a copy of these photographs.

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

There is minor crush to the entire front bumper and grill area of the Toyota with lateral shift from left to right consistent with the angled impact configuration. The delta V is low, visually estimated at approximately 10 mph. The CDC estimated from the photos is 11FDEW1.

#### ***Interior Damage***

There is a distinct indentation to the upper cover flap of the passenger side air bag system visible in the photos. The air bag cover flap contacted the girls face resulting in a fatal closed head injury.

#### ***Occupant Information***

The driver of the Toyota was 38 year old female. The driver is noted on the PAR as having an "A" injury level, restrained by the supplemental driver air bag system only and not restrained by the available manual lap and shoulder belt system. The local coroner mentioned that the mother received only minor abrasion injuries. In addition, the coroner mentioned that this driver routinely drove around the town unrestrained and above the posted speed limit. The driver is the wife of a local law enforcement officer. No citations were issued.

The right front passenger was the driver's 6 year old daughter. The police accident report listed her as receiving fatal injuries, restrained by a passenger side air bag and not restrained by the available manual lap and shoulder belt system. The coroner described her as having a severe closed head injury. The funeral home embalmer noted severe head swelling, abrasions to forehead and face. He further stated that due to the condition of her face, the casket was closed. The death certificate listed cause of death as severe closed head trauma. No invasive autopsy

was performed.

The 6 year old child's injuries are from an impact between her face/ head and the passenger side air bag cover flap. The unrestrained right front occupant was seated. During the severe braking evasive maneuver she slid forward off the seat contacting the passenger side air bag module cover with her face as the air bag began to deploy. The air bag module cover flap contacted her face resulting in the face and closed head injuries. The 6 year old child expired six hours later at a local hospital.

<b>Front Right Occupant Injures</b>	<b>Source</b>	<b>Severity NASS AIS-90</b>	<b>Injury Mechanism</b>
Severe Closed Head Injury	Death Certificate	115099.70	Passenger side Air bag module cover
Swelling & Abrasions to face and forehead	Funeral Home Embalmer	290202.10	Passenger side Air bag module cover

### **Vehicle Number 2 - 1989 Chrysler LeBaron 2 Door**

Vehicle number two was a 1989 Chrysler LeBaron 2 door VIN 1C3XJ41J4KG equipped with a driver air bag system. The Chrysler was not towed from the scene. No photographs were available. Due to impact angle, the PDOF on this vehicle would be predominantly lateral and deployment of the air bag would not be expected.

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

The damage information is based on the police report information. The Chrysler was struck on the right side with the force predominantly behind the center of gravity, based on the 180 degrees of rotation indicated between impact and final rest.

#### ***Occupant Information***

The driver of the Chrysler was a 15 year old female. The driver is noted on the PAR as not injured, and restrained by the available manual lap and shoulder belt system. There is no mention in the police accident report of an air bag deployment.

The front right passenger in the Chrysler was a 15 year old male. The passenger is noted on the PAR as not injured, and restrained by the available manual lap and shoulder belt system

### **CRASH DATA:**

### ***Pre-crash***

The Toyota was traveling in second lane from the curb south bound on a 6 lane, divided, dry, lighted, asphalt highway at [REDACTED] hours on [REDACTED] 1994. As the Toyota approached a four leg intersection controlled by an on-colors traffic control light, green for this driver, a Chrysler made a left turn in front of the Toyota. The driver of the 1995 Toyota Camry LE made a braking avoidance action which resulted in tire skid marks.

The posted speed limit is 40 MPH. The police reported this driver as traveling 30 MPH. However, the coroner noted that this driver usually exceeded the posted speed limit. The driver is the wife of a local law enforcement officer.

The Chrysler was traveling northbound in the left turn lane on a 6 lane, divided, dry, lighted, asphalt highway at [REDACTED] hours on [REDACTED] 1994. The posted speed limit of 40 MPH. The police reported this driver as travel speed as unknown. The intersection was controlled by an on-colors traffic control light. The 1989 Chrysler LeBaron made a left turn to proceed west in front of the Toyota, failing to yield the right of way and against the red light.

### ***At-crash***

The front of the Toyota struck the right side of the Chrysler. The entire front plane of the Toyota had minor crush damage with lateral shift from left to right (11 o'clock PDOF) consistent with the angled impact configuration. The delta V is low, visually estimated at approximately 10 MPH. The Chrysler was struck on the right side with an estimated 2 o'clock principle direction of force, predominantly behind the center of gravity, based on the 180 degrees of rotation indicated between impact and final rest.

During the braking evasive maneuver the right front occupant of the Toyota slid forward off the seat contacting the passenger side air bag module cover as the air bag began to deploy. The air bag module cover flap contacted her face resulting in a severe closed head injuries

The final rest of the Toyota was reported near the point of impact, while Chrysler was spun clockwise almost 180 degrees.

### ***Post-crash***

The local police department responding officers witnessed this crash and summoned for emergency medical help at [REDACTED] hours. The local fire company responded with paramedics at [REDACTED] hours. The injured occupants of the Toyota, a 6 year old child and her mother, the 38 year old driver, were transported to a local hospital emergency room arriving at [REDACTED] hours. The 6 year old child expired the next day at [REDACTED] hours. The Toyota was towed from the scene. The Chrysler was driven from the scene.





## Vehicle Photographs



Photo #1 1995 Toyota Avalon Front Damage (11FDEW1)



Photo #2 1995 Toyota Avalon interior through windshield  
Note: Head contact to the passenger side air bag module cover





Photo #3 Toyota Avalon interior passenger side air bag module cover.

Note: Dent in air bag module cover to head/face direct contact



Photo #4 1995 Toyota Avalon interior passenger side air bag module cover close-up.

Note: Dent in air bag module cover to head/face direct contact