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CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 93-19

VEHICLE - 1990 MERCEDES-BENZ 300E
LOCATION - [redacted] FL
ACCIDENT DATE - [redacted] 1993

Contract No. DTNH22-94-A-07047

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

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On-site investigation of a minor severity front-to-rear impact sequence that involved a 1990 Mercedes-Benz 300E which resulted in deployment of its driver's side Supplemental Restraint System (SRS).

16. *Abstract*

This on-site investigation focused on a 1990 Mercedes-Benz 300E that was involved in a minor front-to-rear impact sequence with a 1982 Volvo station wagon. As a result of the crash, the Mercedes-Benz driver's side air bag system deployed. The 32 year old female driver of the vehicle was slightly out of position to her right at impact as she was attending to her 3 year old child who was seated in the center rear area of the vehicle. Her left hand was on the steering wheel rim at the 11-11:30 o'clock position as the driver's side air bag system deployed. The bag contacted the anterior aspect of her left arm and displaced her hand and wrist into the windshield. The hand and wrist contact cracked the laminated windshield 39 cm (15.25") left of center. As a result, the driver sustained multiple lacerations of the lateral and dorsal aspect of the hand, multiple contusions of the hand, and a fracture of the left radial styloid (AIS-2). The air bag subsequently contacted the driver's chest which contused and abraded the lateral aspect of her left breast (AIS-1). The child passenger in the Mercedes and the driver of the struck Volvo were not injured.

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CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION
CALSPAN CASE NO. 93-19
VEHICLE - 1990 MERCEDES-BENZ 300E
LOCATION [redacted] FL

SUMMARY

This on-site investigation was initiated following the driver's complaint to the National Highway Traffic Safety Administration (NHTSA) of a possible inadvertent deployment of the driver's side air bag system in a 1990 Mercedes-Benz 300E, 4 dr. sedan. The driver reported that she sustained multiple abrasions and a fracture of her left wrist from her involvement with the deployed air bag. In addition to the [redacted] investigation, a [redacted] from [redacted] conducted an independent investigation and analysis of the on board system diagnostics. A consultant retained by the driver's insurance company was present as an observer during the inspection of the Mercedes-Benz.

The involved 1990 Mercedes-Benz 300E was leased as a new vehicle by the driver in [redacted] 1990. The vehicle was black in color and was equipped with a 3.0 liter, six cylinder engine and a four-speed automatic overdrive transmission, four wheel power-assisted disc brakes with anti-lock (ABS), power windows, power seats, power door locks, power sunroof, and a fixed steering column. In addition, the 300E was equipped with a Supplemental Restraint System (SRS) that consisted of a driver's side air bag system and emergency tensioning retractors (ETRs) in the left front and right front 3-point manual lap and shoulder belt systems. The vehicle was manufactured in [redacted] 1990 and was identified by the following vehicle identification number (V.I.N.): [redacted] At the time of our inspection, the vehicle had an odometer reading of 81,022 km (50,324 miles).

The incident occurred on a six-lane (inclusive of turn lanes) divided highway on [redacted] 1993 during daylight hours. The driver of the Mercedes-Benz was transporting her 3 year old child to pre-school and was traveling in an easterly direction in the right lane on an approach to a 4-leg intersection. Traffic flow through the intersection was controlled by an overhead signal system. A 1982 Volvo diesel station wagon was stopped in the eastbound travel lane for a red signal phase. The driver of the Volvo stated that he was stopped for approximately 2-3 seconds prior to the impending impact and was the third or fourth vehicle in a line of stopped traffic from the intersection. The driver of the Mercedes-Benz decelerated her vehicle for the red signal phase and apparently stopped behind the Volvo. As she stopped, the driver of the Mercedes-Benz reached between the front bucket seats with her right hand to attend to her 3 year old child who was seated in a booster seat in the center rear position. Her right foot probably slid off the brake pedal and inadvertently depressed the accelerator pedal, causing the vehicle to accelerate forward. Initially, the driver's left hand was positioned on the steering wheel rim at the 11 o'clock sector; however, as she reached toward her child, she probably rotated the steering wheel in a clockwise direction. As a result, the vehicle turned slightly to the right as it inadvertently accelerated forward.

The left front bumper area of the Mercedes-Benz impacted the right rear bumper guard area of the stopped Volvo station wagon resulting in a 12 o'clock/6 o'clock impact configuration. The bumper-to-bumper contact produced minor damage to the involved end planes of the vehicles. The Mercedes-Benz sustained a vertically orientated rectangular depression to the left front bumper facia from contact with the right rear bumper guard on the Volvo. The depression was located 49-55 cm (19 7/16" -

21.5") left of center and was approximately 1.6 mm (1/8") in depth. The Mercedes-Benz bumper system did not utilize a hydraulic type energy absorbing unit. A rubberized type mount affixed between the left frame rail and the bumper reinforcement bar was slightly deformed. In addition, the left corner of the heavy gauge steel backer bar to the bumper reinforcement was displaced approximately 1.3 cm (0.5") rearward. There was no visible deformation to the frame rail or adjoining undercarriage components; however, the left wheelbase measured approximately 3 mm (1/8") less than the right side. The face of the front bumper rebounded; therefore, there was no residual crush to the exterior of the Mercedes Benz 300E.

The rear bumper of the Volvo station wagon did not yield evidence of direct contact and there was no residual crush to the vehicle. Both rear bumper energy absorbing units appeared to have fully compressed 8.9 cm (3.5"), then returned to their original position. The full compression of the units was transmitted into the unibody of the vehicle which resulted in a small outward buckling of the right rear quarter panel located directly above the axle position. There was no reduction of the vehicle's wheelbases.

The driver's side air bag system of the Mercedes-Benz 300E deployed as a result of the minor severity front-to-rear impact sequence. The Mercedes' SRS had a dual deployment threshold level and logic sequence that varied on the use of the manual belt systems. The [redacted] product analysis engineer stated that the deployment thresholds were rated at barrier equivalent speeds of 14 and 24 KPH (9 and 15 mph). At the 14 KPH (9 mph) threshold, only the emergency tensioning retractors (ETRs) would deploy if the manual belt systems were buckled. If the belts are not buckled, then only the driver's side air bag would deploy at either threshold. When the second threshold (24 KPH) is exceeded and the belt systems are buckled, both the ETRs and the driver's side air bag would deploy. The driver's side ETR did not activate; therefore, it was determined that the driver was not wearing the manual belt system.

At impact, the driver's torso was rotated in a clockwise direction and she was reaching with her right hand, attending to her 3 year old child in the center rear position. Her left hand was on the steering wheel rim at the 11-11:30 o'clock sector. The power driver's seat track was adjusted 10 cm (3.9") rearward of the full forward position and the forward aspect of the seat cushion was adjusted to the full up (vertical) position. The adjustable head restraint was down on top of the seat back and was rotated in a forward position. The Mercedes-Benz 300E was equipped with a fixed, non-tilt, non-telescoping steering column. As the driver's side air bag system deployed, the inflating air bag contacted the driver's left anterior arm and left breast area. The driver sustained an abrasion (AIS-1) of the anterior left arm that extended from the forearm, across the elbow, and onto the upper arm. In addition, she also sustained an abrasion with contusion to the lateral aspect of her left breast (AIS-1). The expanding air bag displaced the driver's left hand from the steering wheel rim and thrust her left arm in an upward direction. As a result, the dorsal and medial aspect of her left hand impacted and cracked the laminated windshield 39 cm (15.25") left of center and 18 cm (7") above the upper instrument panel. The contact produced multiple lacerations (AIS-1) to the medial and dorsal aspects of the left 5th finger and hand. She also sustained a small laceration between the thumb and index finger and a contusion between the index and middle left fingers. The hand contact rotated the wrist as her arm continued in an upward direction which allowed the left wrist area to subsequently contact the windshield and produce further cracking to the glass. The contact sequence resulted in a fracture of the left radial styloid (AIS-2). The driver stated that in addition to the injuries, the windshield

contact fractured her 5th and index fingernails and deformed the prongs on her engagement ring.

The driver's face contacted the right center area of the air bag. A 4 cm (1.75") diameter upper lipstick transfer was noted to the bag 11-16 cm (4.5 - 6.25") right of center and 5-10 cm (2.1-3.9") above the horizontal centerline. There was no injury or additional contact evidence from her involvement with the air bag.

Immediately following the minor severity front-to-rear impact sequence, the driver of the Mercedes-Benz noted a smoke-like dust within the vehicle. She exited the vehicle and removed her child from his booster seat. The child was not injured. A local ambulance service responded to the crash scene and flushed the driver's left arm abrasion with sterile water to relieve a burning sensation. She used her cellular telephone and notified her husband of the crash. He subsequently transported her from the scene to a local hospital where she was treated for her injuries and released. The driver also reported hearing a loud "gun shot" type sound at impact that she associated with air bag deployment. She stated that the noise resulted in temporary deafness of the right ear that persisted for approximately 48 hours.

The 47 year old male driver of the struck Volvo station wagon was wearing the manual 3-point lap and shoulder belt system. He was not injured as a result of the crash.

The driver's side air bag of the Mercedes-Benz deployed as designed with no damage to the bag or associated components. The module cover opened at the designated tear points in an H-configuration. The upper flap measured 23 cm (9.25") horizontally x 6 cm (2 3/8") while the lower flap was 23 cm (9.25") x 7 cm (2.75"). The air bag was constructed of a woven nylon-type fabric and was approximately 69 cm (27") in diameter. The tethered air bag was sewn with an external peripheral seam. Venting of the air bag gases was accomplished through a porous panel that was yellowish in color and extended from the 9:30 - 2:30 o'clock positions along the upper back side of the bag.

The Mercedes-Benz SRS utilizes a single control unit that combines the crash sensor, energy accumulator, and voltage converter. The unit was mounted within the forward portion of the center console area. A service technician at the [redacted] dealership removed the sensor unit from the vehicle. [redacted] performed a readout on the unit which records system functions. All circuits of the SRS were tested with an ohm meter connected to various pins of the 10-pin female connector for the sensor unit. Both front seat belt systems, the ETRs, and the indicator lamp were within normal limits. The squib circuit was open due to deployment of the air bag. A "dummy" resistor was plugged into the air bag circuit to simulate an air bag. In this test mode, the circuit yielded a normal reading; therefore, no faults were detected.

CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION
CALSPAN CASE NO. 93-19
VEHICLE - 1990 MERCEDES-BENZ 300E
LOCATION - [redacted] FL

CRASH DATA

Location:	Approach to a four-leg intersection
City/Township:	[redacted] FL
Area/Type:	Urban/Commercial
Crash Date/Time:	[redacted] 1993, daylight hours
Investigating Police Agency:	[redacted] Police Department
Crash Type:	Car/Car, front-to-rear impact configuration
Air Bag Vehicle Occupant Injury Severity:	Driver - Moderate (AIS-2) Passenger - Not injured

AMBIENCE

Viewing Conditions:	Daylight
Weather:	Cloudy
Precipitation:	None
Road Surface:	Dry

HIGHWAY

Type:	State route
Number of Lanes:	6, divided
Surface:	Asphalt

HIGHWAY (CONT'D.)

Vertical Alignment:	Level
Horizontal Alignment:	Straight
Traffic Density:	Moderate to heavy
Signals:	On-colors traffic signal approximately 91 m (300') east of crash site
Signs:	No pertinent signs
Markings:	Broken white lane lines, solid white left and right turn lane lines
Speed Limit:	72 KPH (45 mph)

TRAFFIC CONTROLS

Signals:	On-colors traffic signal approximately 91 m (300') east of crash site
Signs:	No pertinent signs
Markings:	Broken white lane lines, solid white left and right turn lane lines
Speed Limit:	72 KPH (45 mph)

VEHICLES

	Air Bag Vehicle	Vehicle #2
Description:	1990 Mercedes-Benz 300E, 4 dr. sedan	1982 Volvo diesel station wagon
V.I.N.:	WDBEA26D3LB (production number deleted)	YVIAX7752C1 (production number deleted)
Date of Manufacture:	[redacted]1990	Unknown
Color:	Black	Maroon
Odometer:	81,022 km (50,324 miles)	126,816 km (78,768 miles)
Engine:	6 cylinder, 3.0 liter	4 cylinder, D24 diesel

VEHICLE (CONT'D.)

Transmission:	4-speed automatic overdrive, console mounted selecter lever	3-speed automatic, console mounted transmission selecter lever
Steering:	Power-assisted	Power-assisted
Brakes:	Power-assisted 4-wheel disc with anti-lock (ABS)	Power-assisted front disc
Padding:	Upper, mid, and lower instrument panel, console, sunvisors, soft edged steering wheel rim and air bag module cover, 4-way adjustable head restraints, center armrest, door armrests	Upper, mid, and lower instrument panel, head restraints, door panels, door armrests, soft edged steering wheel rim
Manual Restraints:	3-point lap and shoulder belts with adjustable D-rings for the left front and right front seated positions, 3-point lap and shoulder belts in the rear outboard positions, center rear lap belt	3-point lap and shoulder belts in the four outboard seated positions, center rear lap belt
Automatic Restraints:	Supplemental Restraint System (SRS) that consisted of a driver's side air bag and pyrotechnic emergency tensioning retractors (ETRs) in the front seat manual belt systems	None
Defects:	None	None
Tow Status:	Towed, not due to damage	Not required, driven from scene

VEHICLE DAMAGE

	Air Bag Vehicle	Vehicle #2
Exterior:	The Mercedes-Benz sustained minor frontal damage as a result of the front-to-rear impact sequence with the stopped Volvo station wagon. The direct contact damage on the bumper facia consisted of a vertically orientated deformed area that resembled the rear bumper guard of the Volvo. The damage extended 49.4 - 54.6 cm (19 7/16" - 21.5") left of center and was 3 mm (1/8") in depth. The direct contact damage was isolated to the bumper face as the impact involved bumper-to-bumper contact. There was minimal residual crush at the left front corner that was estimated at 0.6 cm (0.25"). The Mercedes-Benz 300E bumper system did not utilize a hydraulic type energy absorbing unit. There was a rubberized type mount that was affixed to the bumper reinforcement bar and bolted to a heavy gauge sheetmetal backer plate which was welded to the frame rails and an outboard bracket. The left rubberized mount was slightly compressed due to the impact while the right side was not damaged. The backer plate was displaced approximately 1.3 cm (0.5") rearward at the left corner area. There was no visible deformation to the frame rail or adjoining under-carriage components; however, the left wheelbase measured 3 cm (1/8") less than the right wheelbase.	The rear of the 1982 Volvo station wagon sustained minor damage from its impact sequence with the Mercedes-Benz 300E. There was no direct contact evidence on the rear bumper rub strip. The left front bumper area of the Mercedes-Benz impacted the right bumper guard area of the rear bumper and fully compressed the bumper energy absorbing devices (EADs). The bumper guard was 5.3 cm (2.1") in width and was located 39.4 cm (15.5") outboard of the centerline of the vehicle. The guard protruded 1.6 mm (5/16") from the rub strip. The male end of the rear EADs was covered with a rubber jacket which interfered with the measurement of the units. It appeared that both EADs compressed approximately 8.9 cm (3.5") then returned to their original pre-crash positions. The rubberized filler panel that extended between the top surface of the bumper and the body of the vehicle was bowed at the right lower corner of the tailgate due to compression of the rear bumper. The right side of the undercarriage sheetmetal seam at the rear edge of the trunk floor was partially separated due to the full compression of the right EAD. The seam was sealed with a caulk-like material that was disrupted, revealing the minimal deformation of the sheetmetal juncture. There was no additional damage to the undercarriage area of the vehicle.

VEHICLE DAMAGE (CONT'D).

	Air Bag Vehicle	Vehicle #2
Exterior (Cont'd.):		The compression of the rear bumper area was transmitted through the unibody construction of the vehicle. A small diameter outward buckling of the right quarter panel was visible directly above the right axle position. There was no reduction noted to the 264 cm (104") wheelbases.
CDC:	12-FYLW-1	06-BZLW-1
Repair Cost:	$5,000.00 (preliminary estimate)	Unknown
Interior:	The interior damage to the Mercedes-Benz 300E was minor and was limited to deployment of the driver's side air bag system and subsequent driver contact with the bag and windshield. A lipstick transfer was noted to the right center area of the deployed air bag. The upper lipstick transfer extended 11.4-15.9 cm (4.5-6.25") right of center and 5.3-9.9 cm (2.1-3.9") above the horizontal centerline of the bag. The medial dorsal aspect of the driver's left hand impacted the windshield as the hand separated from the steering wheel following air bag expansion against the left anterior area. The hand contact fractured the laminated glass 38.7 cm (15.25") left of center and 17.8 cm (7") above the upper instrument panel. The dorsal aspect of the driver's left wrist subsequently impacted the windshield adjacent to the hand contact, which further cracked the glass. The contacts bowed the windshield outward approximately 6 mm (.25"). There was no additional contact evidence or deformation of the steering wheel.	There was no visible evidence of damage to the interior surfaces of the Volvo station wagon. The driver reported that the impact displaced a tensioning spring from the left front seat track. There was no damage or intrusion to the rear cargo area of the vehicle.

SUPPLEMENTAL RESTRAINT SYSTEM

The 1990 Mercedes-Benz 300E was equipped with a Supplemental Restraint System (SRS) that consisted of a driver side air bag and pyrotechnic emergency tensioning retractors (ETRs) in the front 3-point manual belt systems. The driver's side air bag deployed as a result of the vehicle's minor severity frontal impact sequence with the rear of the stopped Volvo stationwagon. The SRS utilized a control unit that combined the crash sensor, energy accumulator, and voltage converter in a single housing. The unit was mounted to the top of the transmission tunnel, forward of the center console/instrument panel juncture. This unit detects the longitudinal decelerations required for deployment of the system and processes information provided by the seat belt buckle switches to determine if the belts are buckled or not buckled. Based on belt usage, the SRS deploys the ETRs and/or the driver's side air bag at two delta V thresholds. The first threshold value was reported at $\geq$ 14 < 24 KPH ($\geq$ 9 < 15 mph), while the second threshold level was $\geq$ 24 KPH ($\geq$ 15 mph). At the first (lower) threshold level, only the ETRs will activate if the front seat belt systems are fastened (worn). If the second (higher) threshold level is exceeded, the ETRs and the driver's side air bag will deploy when the belt systems are fastened. The driver's side air bag will deploy when either threshold level is exceeded when the belt systems are not fastened. The driver's side air bag deployed during this crash; however, the ETRs did not fire. Therefore, the driver's side belt system was not worn at the time of the crash.

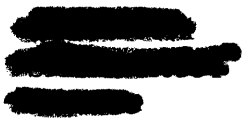
The driver's side air bag deployed from the module contained within the four spoke steering wheel assembly that was mounted to a fixed column. The module cover flaps opened at the designated tear points in an H-configuration. The upper module cover flap was 23 cm (9.25") in width and 6 cm (2 3/8") in height, while the lower flap had respective measurements of 23 cm (9.25"), and 7 cm (2.75"). The air bag was constructed of a typical woven nylon fabric and was approximately 69 cm (27") in diameter. The bag was sewn with an external peripheral seam and was tethered with internal straps. Venting of the bag was accomplished through a porous panel that was sewn to the upper portion of the module side of the bag which extended from the 9:30 - 2:30 o'clock sectors. There was no damage to the module cover flaps, air bag, or vent panel.

The peripheral surface of the air bag contacted and abraded the anterior aspect of the driver's left arm. There was no contact evidence visible on the air bag. Her face subsequently contacted the right center area of the bag. A lipstick transfer was located 11-16 cm (4.5 - 6.25") right of center and 5-10 cm (2.1-3.9") above the horizontal centerline of the bag.

The module assembly was removed from the steering wheel of the vehicle. The gas generator was identified by the following serial number that was stamped on the side of the unit: [redacted]. In addition, several bar coded labels were affixed to the unit and were identified as follows:

The gas generator was also identified with a [redacted] compliance number of [redacted]. A label on the side of the generator identified the unit as follows:

[redacted] Air Bag Gas Generator



SUPPLEMENTAL RESTRAINT SYSTEM (CONT'D.)

The SRS control unit was disconnected from the twelve pin connector and was removed from the vehicle by a [redacted] service technician. The [redacted] tested the resistance of each circuit with an ohmmeter within the SRS to determine component performance and/or system usage. All systems tested within the nominal limits that were specified in the Mercedes-Benz SRS Operation and Diagnosis Manual. The following chart identifies the pin numbers, components tested, the resistance of the test procedure, and the specified nominal values.

Pin Numbers	Component/System	Test Resistance	Nominal Values
2 ↔ 6	Air Bag	Open (deployed)	-
1 ↔ 5	Left ETR	2.6 ohms	2-5 ohms
1 ↔ 8	Right ETR	2.5 ohms	2-5 ohms
10 ↔ 12	Driver seat belt buckle (belt not fastened)	401 ohms	400 ± 50 ohms
10 ↔ 12	Driver seat belt buckle (belt fastened)	99.2 ohms	100 ± 20 ohms
11 ↔ 12	Passenger seat belt buckle (belt not fastened)	398 ohms	400 ± 50 ohms
11 ↔ 12	Passenger seat belt buckle (belt fastened)	100 ohms	100 ± 20 ohms
3 ↔ 9	SRS Warning Lamp	13.6 V	11-14 V
2 ↔ 6	Air Bag (with resistor to simulate active squib)	3.1 ohms	2-10 ohms

COLLISION SEQUENCE

Pre-Crash:

The 1990 Mercedes-Benz 300E was proceeding in an easterly direction in the outboard travel lane of a state route on an approach to a four-leg intersection. Traffic flow through the intersection was controlled by an overhead signal system. The driver was decelerating her vehicle as she approached the intersection on a red signal phase. A 1982 Volvo station wagon was traveling ahead of the Mercedes-Benz and stopped in a line of traffic for the red signal phase in the outboard lane. The driver of the Volvo stated that he was 5-10 car lengths from the intersection and estimated that he had been stopped for several seconds prior to the impending crash.

The driver of the Mercedes-Benz stated that as she approached the standing traffic, she was distracted from her driving task by her 3 year old son who was seated in the center rear of the vehicle. She apparently stopped her vehicle an unknown distance behind the Volvo station wagon and turned her torso in a clockwise direction and reached with her right hand to retrieve her son's shoe. Her left hand remained on the steering wheel rim and as she reached toward her child, she probably turned the wheel slightly in a clockwise direction. The driver of the Mercedes-Benz also stated that her right foot probably slid off the brake pedal and inadvertently depressed the accelerator pedal. As a result, the Mercedes-Benz accelerated forward and impacted the rear of the stopped Volvo.

Crash:

The frontal area of the Mercedes-Benz impacted the rear of the stopped Volvo station wagon. Based on the minor severity damage to the vehicles, the left front bumper area of the Mercedes-Benz probably impacted the right rear bumper area of the Volvo in a slightly offset configuration. There was no direct contact evidence on the rear bumper rub strip of the Volvo; however, the right quarter panel had slight induced deformation above the axle position. Both rear bumper energy absorbing units appeared to have fully compressed and returned to the original positions. Direct contact damage on the Mercedes-Benz consisted of a narrow vertically orientated crease on the bumper facia located below the left headlamp. This crease resulted from engagement against the protruding bumper guard on the Volvo. Resultant directions of force were 12 o'clock for the Mercedes-Benz and 6 o'clock for the struck Volvo. The minor severity impact did not produce residual crush to the vehicles; therefore, computerized reconstruction of vehicle speeds could not be utilized.

The Mercedes-Benz 300E was equipped with a dual threshold SRS system. A [redacted] stated that the lower threshold required a barrier equivalent deceleration of 14 KPH (9 mph) to deploy the system and the upper threshold required a velocity change of 24 KPH (15 mph). Impact induced decelerations at the lower threshold level ($\geq$ 9 $\leq$ 15 KPH) will only deploy the emergency tensioning retractors (ETRs) if the manual belt systems are

COLLISION SEQUENCE (CONT'D.)

Crash (Cont'd.): used. When the manual belt systems are not worn, the driver's side air bag will deploy at the lower threshold level. The driver of the Mercedes-Benz stated that she was wearing the manual 3-point belt system on the approach to the crash scene. She subsequently unfastened the belt system with her right hand as she reached to attend to her son; therefore, only the driver's side air bag would deploy in a crash.

Although the crash damage was minimal to the involved vehicles, the Mercedes-Benz probably sustained a short duration crash pulse that was within the 14 KPH (9 mph) range and as a result, the driver's side air bag system deployed. The driver sustained multiple minor and moderate severity injuries from her involvement with the air bag and subsequent windshield contact.

The impact displaced the Volvo in a forward direction. The driver of the Volvo stated that his foot lifted off the brake pedal as he responded to the 6 o'clock impact force; however, he immediately reapplied the brakes to avoid contact with the vehicle that was stopped ahead of him. The driver of the Mercedes probably braked at or immediately following the crash and stopped the vehicle in the travel lane behind the Volvo.

Post-Crash:

Final Rest - The Volvo came to rest in the eastbound travel lane forward of its at-impact position. The driver of the Volvo stated that the Mercedes-Benz came to rest approximately 2-2.5 m (7-8') behind the final rest position of his vehicle.

Driver Activities - The driver of the Mercedes-Benz detected a smoke-like dust within the vehicle following the crash. She initially thought the vehicle was on fire and immediately exited the vehicle. As the driver of the Volvo exited his vehicle, he observed that the Mercedes driver was already standing outside of her vehicle. As the dust settled, the driver of the Mercedes returned to her vehicle and used her cellular telephone to notify her husband of the crash.

Police Activities - The [redacted] police department dispatched an officer to the scene. He arrived approximately 4 minutes following notification and initiated his investigation. The driver of the Mercedes-Benz was subsequently charged with careless driving.

Rescue Activities - Paramedics from a local fire department responded to the crash scene and treated the driver of the Mercedes. The driver sustained abrasions of the left arm from air bag contact and multiple lacerations of the left hand from windshield contact. The paramedics rinsed the injuries with sterile water to clean the lesions. A splint was also applied to the

COLLISION SEQUENCE (CONT'D.)

Rescue Activities (Cont'd.):	left wrist. The driver's husband arrived on-scene and subsequently transported his wife to a local hospital for treatment of her injuries. She was released approximately 2 hours later.
Scene Clearance -	The investigating police officer requested tow assistance for the Mercedes-Benz. The struck Volvo was not diabled and was driven from the scene.

HUMAN FACTORS/OCCUPANT DATA

Driver:	32 year old female
Height:	158.8 cm (62.5")
Weight:	60.8 kg (135 lbs.)
Manual Restraint System Usage:	None
Usage Source:	Vehicle inspection
Eyewear:	None
Vehicle Familiarity:	39 months
Route Familiarity:	Daily
Trip Plan:	Transporting child to pre-school
Mode of Transport From Scene:	Husband transported driver to hospital
Type of Medical Treatment:	Treated and released at local hospital with subsequent visit to private physician

DRIVER INJURIES

Injury	Severity (OIC/AIS)	Source
Fracture of left radial styloid	Moderate (752800.22)	Windshield
Large diameter contusion of the mid anterior thigh	Minor (890402.12)	Steering wheel rim
Abrasion of the anterior aspect of the left arm, extended approximately 5 cm (2") below elbow to 10 cm (4") above elbow joint	Minor (790202.12)	Air bag
Contusion with superficial abrasion of the lateral aspect of the left breast	Minor (490202.12), 490402.12)	Air bag
Contusion of left hand between index and middle fingers	Minor (790402.12)	Windshield
Left fifth finger contused	Minor (790402.12)	Windshield
Multiple small lacerations of the dorsal and medial aspect of the left fifth finger and hand	Minor (790602.12)	Windshield
Swelling with fluid on right knee (not medically diagnosed)	N/A	Knee bolster

DRIVER KINEMATICS

On the approach to the accident scene, the driver of the Mercedes-Benz was in a normal driving posture with her seat track adjusted 10 cm (3.9") from the full forward position and the frontal aspect of the seat cushion elevated to the most vertical position. The left front head restraint was adjusted down onto the seatback and was rotated slightly in a forward direction. The vehicle was not equipped with a tilt or telescoping steering column. The driver was wearing slacks and a short-sleeved blouse.

The driver stated that she was wearing the manual 3-point lap and shoulder belt system as she approached the intersection; however, she unfastened the belt with her right hand prior to attending to her child in the center rear of the vehicle. She rotated her torso in a clockwise direction and reached with her right hand in an attempt to retrieve her son's shoe. During this maneuver, her right foot apparently slid off the brake pedal and inadvertently depressed the accelerator. At impact, her left hand was on the steering wheel rim at the 11-11:30 o'clock position and her left front side was exposed to the steering assembly. As the driver's side air bag deployed, the expanding bag contacted the anterior aspect of her left arm which resulted in an abrasion that extended above and below the elbow joint. The contact displaced the arm in an upward direction and separated her left hand from the steering wheel rim. The dorsal aspect of the left hand impacted and cracked the laminated windshield 39 cm (15.25") left of the vehicle's centerline and 18 cm (7") above the instrument panel. In addition to cracking the glass, the contact bowed the windshield approximately 0.6 cm (0.25") outward. As a result of the contact, the driver sustained multiple small lacerations of the dorsal and medial aspect of the left fifth finger and hand, contusions of the left fifth finger, and contusions of the left hand between the index and middle fingers. The driver also reported that the prongs on her engagement ring were deformed and that her fifth and index fingernails were fractured as a result of the contact sequence. The left hand contact rotated the wrist as her left arm continued in an upward direction. The left wrist area contacted the windshield adjacent to the hand contact which resulted in further damage to the glass and a fracture of the left radial styloid.

The clockwise rotation of the driver's torso and the elevated position of her left arm resulted in air bag contact to her left thoracic area. The driver sustained an abrasion with contusion of the lateral aspect of the left breast. Her face contacted the right center area of the air bag, depositing a lipstick transfer 11-16 cm (4.5-6.25") right of center and 5-10 cm (2.1-3.9") above the horizontal centerline of the bag. No injury occurred from the facial contact sequence. Due to the elevated position of the driver's seat cushion, the anterior aspect of her mid right thigh contacted the lower edge of the steering wheel rim which resulted in a large diameter contusion. There was no contact evidence or rim deformation from the thigh contact.

The driver came to rest in an upright attitude in the left front position of the vehicle. She was subsequently transported by private vehicle to a local hospital for treatment of her injuries. The driver reported that her right knee began to swell several days following the crash; although not medically examined, she suspected injury to the knee that resulted from the crash. It is possible that her knee impacted the right side of the knee bolster as she responded to the 12 o'clock impact force. There was no contact evidence or damage to the bolster components. She further reported temporary deafness of the right ear that persisted for a 48 hour period. The driver attributed the hearing impairment to the loud deployment noise of the air bag.

PASSENGER DATA

Age:	3 years
Sex:	Male
Height:	Unknown
Weight:	Unknown
Seated Position:	Center rear
Manual Restraint System Usage:	Seated in a booster child seat, seat was restrained by the center rear lap belt
Mode of Transport From Scene:	Private vehicle
Type of Medical Treatment:	None, not injured

Frontal View Of The Mercedes-Benz 300E

Direct Contact Damage On The Front Left Bumper Facia

Overhead View Of The Compression To The Bumper Facia

View Looking Upward At The Bumper Facia Deformation

Overhead View Of The Front Right Bumper Facia

Left Front Three-Quarter View

Perpendicular Views Of The Left Front Bumper Area

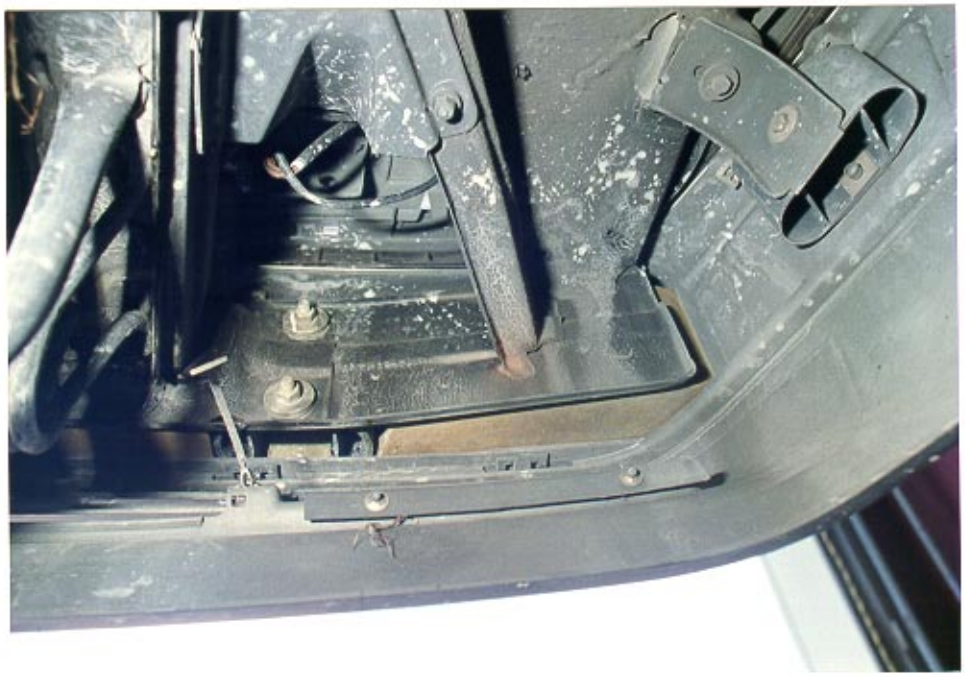
Perpendicular View Of The Left Front Fender Area

Perpendicular View Of The Front Bumper And Upper Radiator Support Panel

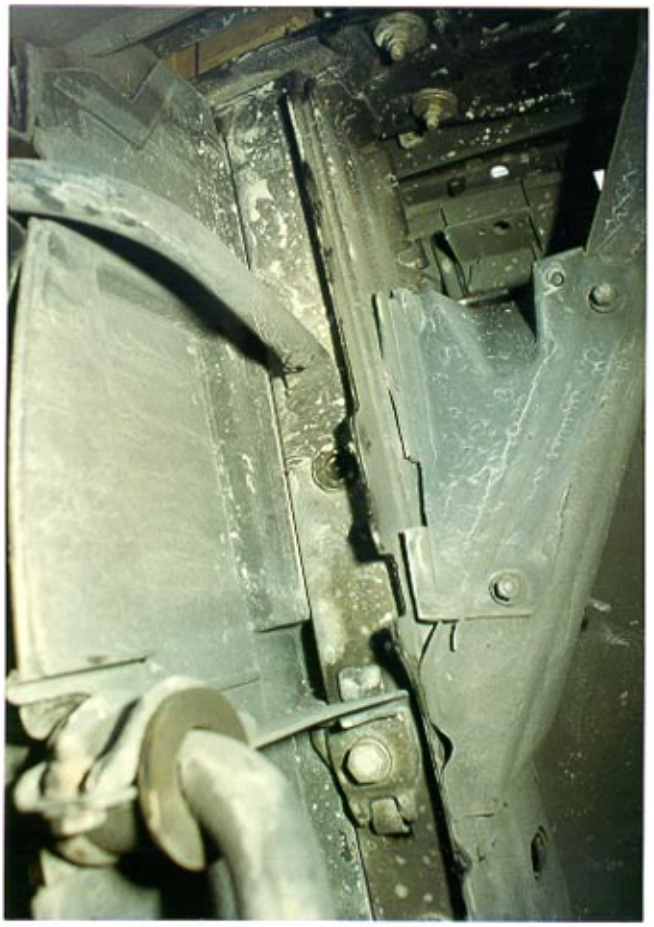
Overhead View Of The Bumper Facia Deformation

Right Front Three-Quarter View

Undercarriage View Of The Backer Panel At The Left Front Corner
(Arrows Indicate Deformation)



Backer Panel At The Right Front Corner



Longitudinal View Of The
Left Frame Rail

Longitudinal View Of The
Right Frame Rail

Overall Views Of The Driver's Seated Area, Related Contact Points, And Deployed Air Bag

Perpendicular View Of The Driver Compartment

Adjusted Position Of The Driver's Seat

View Across The Interior From The Right Door Area

Deployed Driver's Side Air Bag

Lipstick Transfers On The Deployed Driver's Side Air Bag

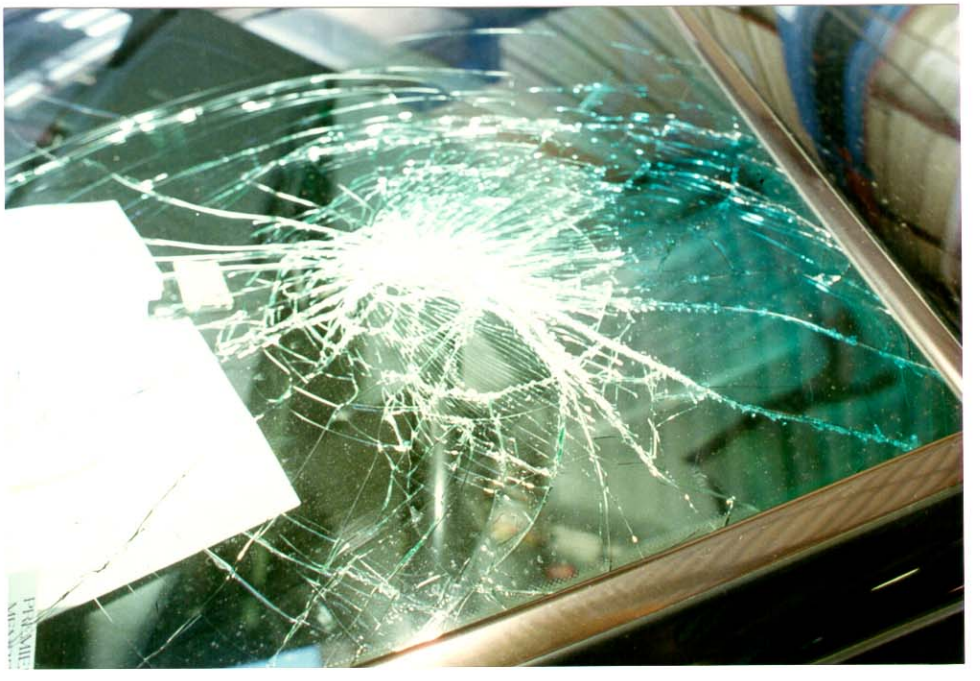
Close-up View Of The Lipstick Transfer

Closed Venting Panel On Upper Portion Of Air Bag

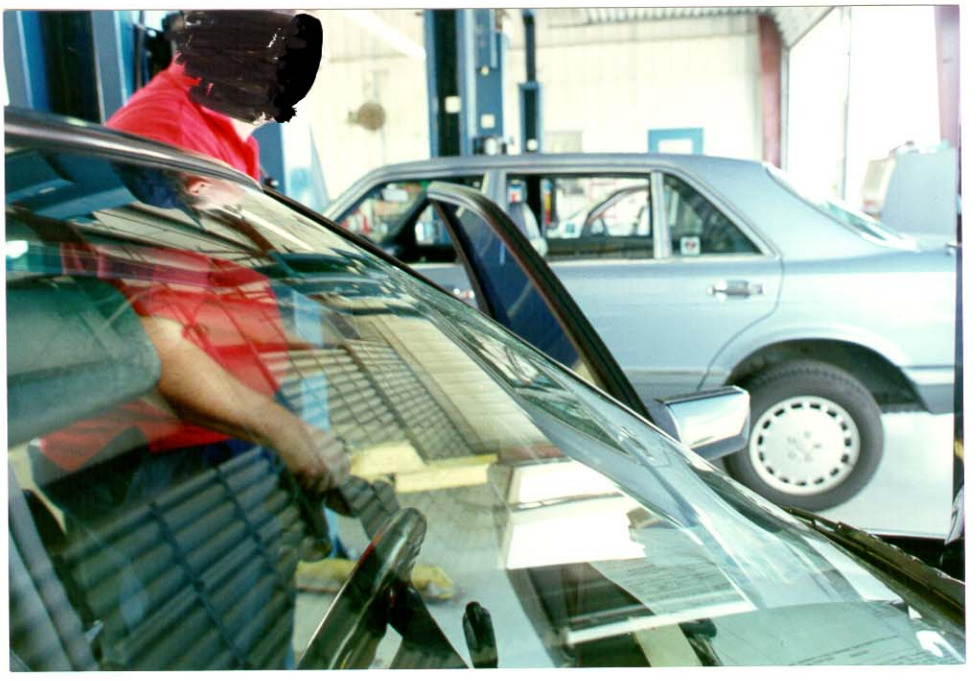
Upper Air Bag Module Cover Flap

Lower Air Bag Module Cover Flap

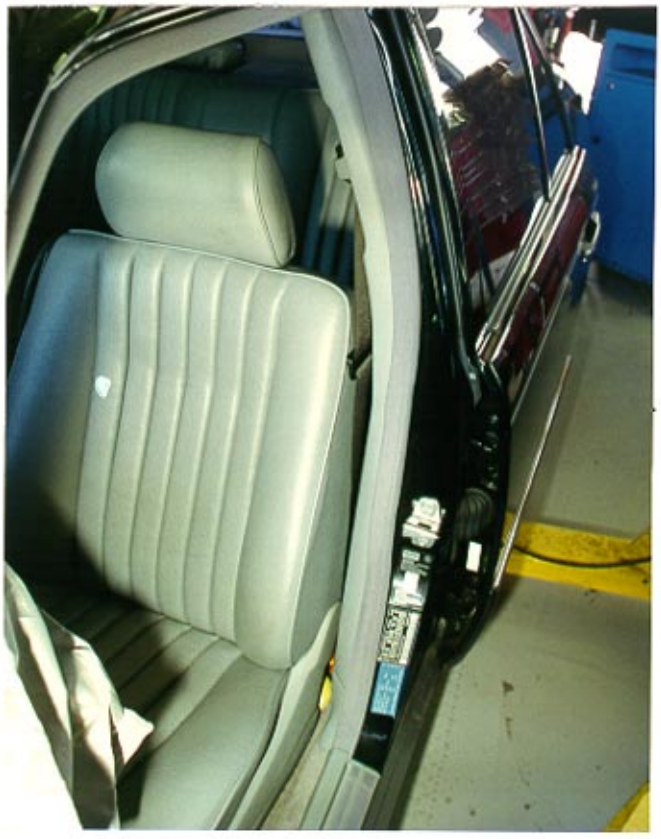
Driver's Left Hand/Wrist Contact To The Windshield



Closeup View Of The Hand/Wrist Contact



Outward Bowing Of The Windshield From Driver's Hand/Wrist Contact



Retracted Left Front Manual Belt System

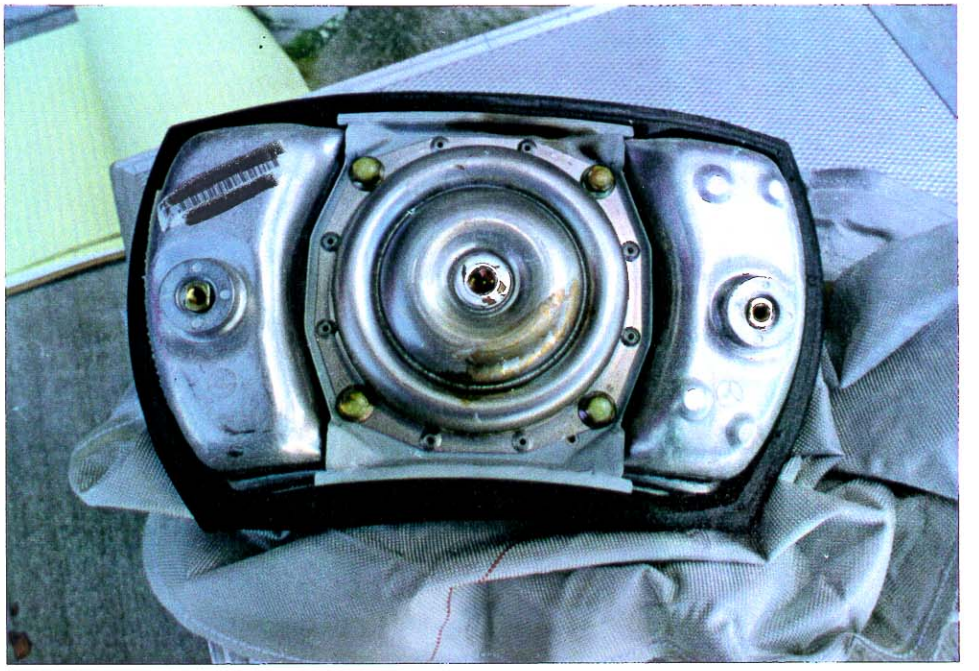
Adjustable D-Ring

Close-up View Of The Left Front Latchplate

Air Bag Module Removed From Steering Wheel

Wiring To The Squib

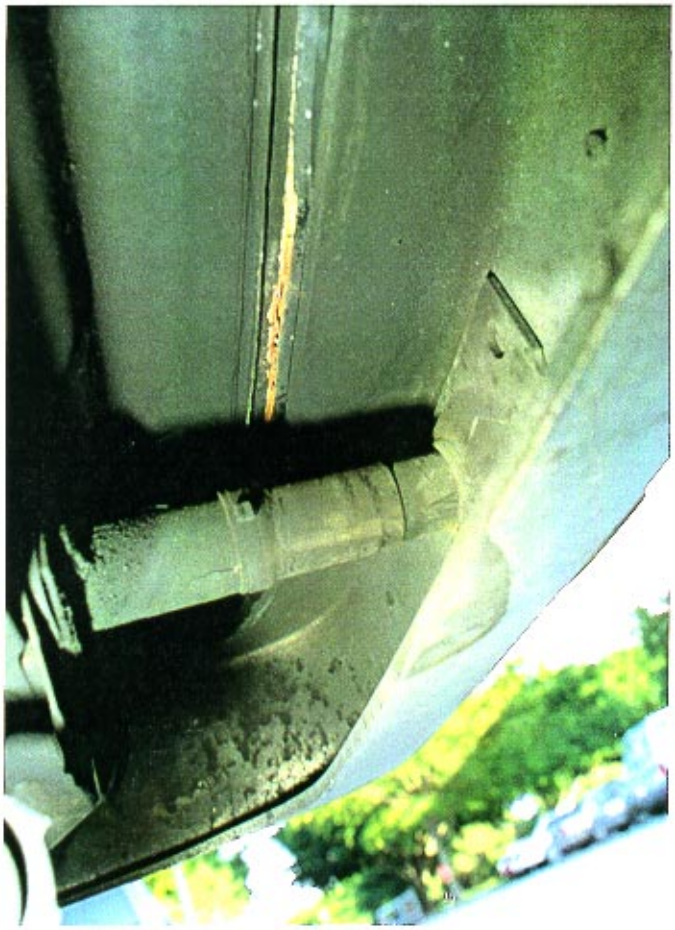
Back Side Of The Module Assembly



Removed Module Assembly

Rear View Of The Struck Volvo

Perpendicular Views Of The Rear Bumper



Compression/Stroke Of The Right Rear Bumper Energy Absorbing Unit

Compression/Stroke Of The Left Rear Bumper Energy Absorbing Unit

Remote Buckling To The Right Rear Quarter Panel
Directly Over the Axle Position

APPENDIX A

Police Accident Report

MAIL TO: DEPT. OF HIGHWAY SAFETY & MOTOR VEHICLES
TRAFFIC CRASH RECORDS

DO NOT WRITE IN THIS SPACE

BEST AVAILABLE COPY

[redacted]

Time & Location

DATE OF CRASH	TIME OF CRASH	TIME OFFICER NOTIFIED	TIME OFFICER ARRIVED	INVEST. AGENCY REPORT NUMBER	HSMV CRASH REPORT NUMBER
[redacted] 93	9 14 ☒ AM ☐ PM	9 14 ☒ AM ☐ PM	9 18 ☒ AM ☐ PM	93- [redacted]	[redacted]

COUNTY/CITY CODE [redacted] Feet or Miles N S E W of CITY OR TOWN [redacted] (Check if in City or Town) ☐ COUNTY [redacted]

AT NODE NO. or FEET / MILES FROM NODE NO. 1☐ 2☐ NEXT NODE NO. NO. OF LANES 04 [1] 1 DIVIDED 2 UNDIVIDED ON STREET, ROAD OR HIGHWAY S.R. [redacted] ([redacted])

AT INTERSECTION OF or FEET / MILES 1☒ 2☐ N S E W ☒ OF INTERSECTION OF [redacted]

Section Vehicle 1

DRIVER ACTION 1 Pursuit 2 Hit & Run 3 N/A [3] YEAR 90 MAKE MERZ TYPE 01 USE 01 VEH. LICENSE NUMBER [redacted] STATE FL VEHICLE IDENTIFICATION NUMBER WDBEA26D3L [redacted] POINT OF IMPACT CIRCLE AREA OF DAMAGE [1] 8 Undercarriage 15 Overturn 16 Windshield 21 Fire 22 Trailer

TRAILER OR TOWED VEHICLE INFORMATION TRAILER TYPE

VEHICLE TRAVELING N S E W ☒ ON S.R. [redacted] AT EST. MPH 20 POSTED SPEED 45 EST. VEHICLE DAMAGE $1800 1 Disabling 2 Functional 3 No Damage [2] EST. TRAILER DAMAGE $

INSURANCE COMPANY (LIABILITY OR PIP) [redacted] POLICY NUMBER [redacted] VEHICLE REMOVED BY: [redacted] 1 Tow Rotation List 2 Tow Owner's Request 3 Driver 4 Other [2]

OWNER'S FULL NAME (Check if Driver) [redacted] CURRENT ADDRESS (Number and Street) SAME AS DRIVER CITY AND STATE ZIP CODE

OWNER'S FULL NAME (Trailer or Towed Vehicle) N/A CURRENT ADDRESS (Number and Street) CITY AND STATE ZIP CODE

Driver / Pedestrian

DRIVER (Exactly as on Driver License) / Pedestrian CURRENT ADDRESS (Number and Street) CITY & STATE / ZIP CODE DATE OF BIRTH [redacted]

DRIVER LICENSE NUMBER [redacted] STATE FL DL TYPE 5 REQ. END. 1 BAC TEST 1 Blood 2 Breath 3 Urine 4 Refused 5 None [5] RESULTS ALC/DRUG 1 PHYS. DEF. 1 RES 1 RACE 1 SEX 2 INJ. 3 S. EQUIP 2 4 EJECT. 1

HAZARDOUS MATERIALS BEING TRANSPORTED 1 Yes 2 No ☒ PLACARDED 1 Yes 2 No ☒ RECOMMEND RE-EXAM 1 Yes 2 No ☒ IF YES, Explain in Narrative DRIVER'S PHONE NO. [redacted]

PASSENGER'S NAME (Additional on Continuation Page) [redacted] CURRENT ADDRESS SAME AS CITY & STATE/ZIP AGE 3 LOC. 4 INJ 1 S. EQUIP 2 EJECT 1

Section Vehicle 2

DRIVER ACTION 1 Pursuit 2 Hit & Run 3 N/A [3] YEAR 82 MAKE VOLVO TYPE 01 USE 0[redacted] VEH. LICENSE NUMBER [redacted] STATE FL VEHICLE IDENTIFICATION NUMBER AX7752[redacted] POINT OF IMPACT CIRCLE AREA OF DAMAGE [5] 8 Undercarriage 15 Overturn 16 Windshield 21 Fire 22 Trailer

TRAILER OR TOWED VEHICLE INFORMATION TRAILER TYPE

VEHICLE TRAVELING N S E W ON AT EST. MPH POSTED SPEED 45 EST. VEHICLE DAMAGE $ 500 1 Disabling 2 Functional 3 No Damage [2] EST. TRAILER DAMAGE $

INSURANCE COMPANY (LIABILITY OR PIP) [redacted] POLICY NUMBER VEHICLE REMOVED BY: 1 Tow Rotation List 2 Tow Owner's Request 3 Driver 4 Other [3]

OWNER'S FULL NAME (Check if Driver) ☑ CURRENT ADDRESS (Number and Street) CITY AND STATE ZIP CODE

OWNER'S FULL NAME (Trailer or Towed Vehicle) N/A CURRENT ADDRESS (Number and Street) CITY AND STATE ZIP CODE

Driver / Pedestrian

DRIVER (Exactly as on Driver License) / Pedestrian CURRENT ADDRESS (Number and Street) CITY & STATE / ZIP CODE DATE OF BIRTH [redacted]

DRIVER LICENSE NUMBER [redacted] STATE FL DL TYPE 5 REQ. END. 1 BAC TEST 1 Blood 2 Breath 3 Urine 4 Refused 5 None [5] RESULTS ALC/DRUG 1 PHYS. DEF. 1 RES 1 RACE 1 SEX 1 INJ. 1 S. EQUIP. 2 - EJECT. 1

HAZARDOUS MATERIALS BEING TRANSPORTED 1 Yes 2 No ☒ PLACARDED 1 Yes 2 No ☒ RECOMMEND RE-EXAM 1 Yes 2 No ☒ IF YES, Explain in Narrative DRIVER'S PHONE NO. [redacted]

PASSENGER'S NAME (Additional on Continuation Page) NONE CURRENT ADDRESS CITY & STATE/ZIP AGE LOC. INJ S. EQUIP EJECT 1

Code Information

VEHICLE TYPE	VEHICLE USE	TRAILER TYPE	RESIDENCE / DL TYPE / RACE / SEX / REQUIRED ENDORSEMENTS	PHYSICAL DEFECTS / INJURY SEVERITY	ALCOHOL / DRUG USE / SAFETY EQUIPMENT USE	LOCATION IN VEHICLE / EJECTED
01 Automobile 02 Passenger Van 03 Pickup/Light Truck (2 rear tires) 04 Medium Truck (4 rear tires) 05 Heavy Truck (2 or more rear axles) 06 Truck Tractor (Cab) 07 Motor Home (RV) 08 Bus 09 Bicycle 10 Motorcycle 11 Moped 12 All Terrain Vehicle 13 Train 77 Other	01 Private Transportation 02 Commercial Passengers 03 Commercial Cargo 04 Public Transportation 05 Public School Bus 06 Private School Bus 07 Ambulance 08 Law Enforcement 09 Fire/Rescue 10 Military 11 Other Government 77 Other	01 Single Semi Trailer 02 Tractor Semi Trailer(s) 03 Tank Trailer 04 Boat Trailer 05 Utility Trailer 06 House Trailer 07 Pole Trailer 08 Towed Vehicle 77 Other	1 County of Crash 2 Elsewhere in State 3 Non-Resident of State 4 Foreign 5 Unknown; DL TYPE A B C D/Chauffeur E/Operator E/Operator F/Non...; RACE 1 White 2 Black 3 Hispanic 4 Other; SEX 1 Male 2 Female; REQUIRED ENDORSEMENTS 1 Yes 2 No	1 No Defects Known 2 Eyesight Defect 3 Fatigue/Asleep 4 Hearing Defect 5 Illness 6 Seizure, Epilepsy, Blackout 7 Other Physical Defect; INJURY SEVERITY 1 None 2 Possible 3 Non-Incapacitating 4 Incapacitating 5 Fatal (Within 90 Days) 6 Non-Traffic Fatality	1 No Drinking or Using Drugs 2 Alcohol - Under Influence 3 Drugs - Under Influence 4 Alcohol & Drugs - Under Influence 5 Had Been Drinking 6 Pending BAC Test Results; SAFETY EQUIPMENT USE 1 Not in Use 2 Seat Belt / Shoulder Harness 3 Child Restraint 4 Air Bag 5 Safety Helmet 6 Eye Protection	1 Front Left 2 Front Center 3 Front Right 4 Rear Left 5 Rear Center 6 Rear Right 7 In Body of Truck 8 Sidecar Passenger 9 Other; EJECTED 1 No 2 Yes 3 Partial

DRIVER ACTION 1 Pedestrian 2 Hit & Run 3 N/A	YEAR	MAKE	TYPE	USE	VEH LICENSE NUMBER	STATE	VEHICLE IDENTIFICATION NUMBER	POINT OF IMPACT / CIRCLE AREA OF DAMAGE 18 Undercarriage 19 Overturn 20 Windshield 21 Fire 22 Trailer
TRAILER OR TOWED VEHICLE INFORMATION			TRAILER TYPE					

Section 3 — Vehicle / Pedestrian

VEHICLE TRAVELING	ON	AT	Est. MPH	Posted Speed	EST. VEHICLE DAMAGE $	1 Disabling 2 Functional 3 No Damage	EST. TRAILER DAMAGE $

INSURANCE COMPANY (LIABILITY ONLY)	POLICY NUMBER	VEHICLE REMOVED BY: 1 Tow Rotation List 2 Tow Owner's Request 3 Driver 4 Other

OWNER'S FULL NAME (Check if Driver)	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE
OWNER'S FULL NAME (Trailer or Towed Vehicle)	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE
DRIVER (Exactly as on Drivers License) / Pedestrian	CURRENT ADDRESS (Number and Street)	CITY & STATE / ZIP CODE	DATE OF BIRTH

DRIVER LICENSE NUMBER	STATE	DL TYPE	REQ END.	BAC TEST 1 Urine 2 Blood 3 Breath 4 Refused 5 None	RESULTS	ALC/DRUG	PHYS DEF.	RACE	SEX	INJ.	S EQUIP.	EJECT.

HAZARDOUS MATERIALS BEING TRANSPORTED 1 Yes 2 No	PLACARDED 1 Yes 2 No	RECOMMEND RE-EXAM 1 Yes 2 No If YES Explain in Narrative	DRIVER'S PHONE NO.

PASSENGER'S NAME (Additional on Continuation Page)	CURRENT ADDRESS	CITY & STATE / ZIP	AGE	LOC.	INJ.	S EQUIP	EJECT

#	PROPERTY DAMAGED - OTHER THAN VEHICLES	EST. AMOUNT	OWNER'S NAME	ADDRESS	CITY	STATE	ZIP
1	Ø	$					
2		$					

CONTRIBUTING CAUSES - DRIVER/PED. (1: 02, 2: 51)
01 No Improper Driving / Action
02 Careless Driving
03 Failed to Yield Right-of-Way
04 Improper Backing
05 Improper Lane Change
06 Improper Turn
07 Alcohol-Under Influence
08 Drugs-Under Influence
09 Alcohol & Drugs-Under Influence
10 Followed Too Closely
11 Disregarded Traffic Signal
12 Exceeded Safe Speed Limit
13 Disregarded Stop Sign
14 Failed to Maintain Equip./Vehicle
15 Improper Passing
16 Drove Left of Center
17 Exceeded Stated Speed Limit
18 Obstructing Traffic
19 Improper Load
20 Disregarded Other Traffic Control
21 Driving Wrong Side/Way
22 Fleeing Police
23 Vehicle Modified
77 All Other (Explain)

VEHICLE DEFECT (1: 01, 2: 01)
01 No Defects
02 Defective Brakes
03 Worn / Smooth Tires
04 Defective / Improper Lights
05 Puncture/Blowout
06 Steering Mech.
07 Windshield Wipers
08 Equipment/Vehicle Defect
77 All Other (Explain in Narrative)

VEHICLE MOVEMENT (1: 01, 2: 02)
01 Straight Ahead
02 Slowing / Stopped, Stalled
03 Making Left Turn
04 Backing
05 Making Right Turn
06 Changing Lanes
07 Entering/Leaving Parking Space
08 Properly Parked
09 Improperly Parked
10 Making U-Turn
11 Passing
12 Driverless or Runaway Veh.
77 All Other Explain in Narrative

VEHICLE SPECIAL FUNCTIONS (1: 1, 2: 1)
1 None
2 Farm
3 Public Transit
4 Recreational
5 Emergency Operation
6 Construction/Maintenance

LOCATION ON ROADWAY (1: 1, 2: 1)
1 On Road
2 Not On Road
3 Shoulder
4 Median
5 Turn Lane/Safety Zone

PEDESTRIAN ACTION
01 Crossing Not at Intersection
02 Crossing at Midblock Crosswalk
03 Crossing at Intersection
04 Walking Along Road With Traffic
05 Walking Along Road Against Traffic
06 Working on Vehicle in Road
07 Other Working in Road
08 Standing/Playing in Road
09 Standing in Roadway / Pedestrian Waiting
77 All Other (Explain)
88 Unknown

LOCATION TYPE (1)
1 Primarily Business
2 Primarily Residential
3 Open Country

FIRST / SUBSEQUENT HARMFUL EVENT (F: 01)
01 Collision With MV in Transport (Rear-end)
02 Collision With MV in Transport (Head-on)
03 Collision With MV in Transport (Angle)
04 Collision With MV in Transport (Left Turn)
05 Collision With MV in Transport (Right Turn)
06 Collision With MV in Transport (Sideswipe)
07 Collision With MV in Transport (Backed Into)
08 Collision With Parked Car
09 Collision With MV on Other Roadway
10 Collision With Pedestrian
11 Collision With Bicycle
12 Collision With Bicycle (Bike Lane)
13 Collision With Moped
14 Collision With Train
15 Collision With Animal
16 MV Hit Sign/Sign Post
17 MV Hit Utility Pole/Light Pole
18 MV Hit Guardrail
19 MV Hit Fence
20 MV Hit Concrete Barrier Wall
21 MV Hit Bridge/Pier/Abutment/Rail
22 MV Hit Tree/Shrubbery
23 Collision With Construction Barricade/Sign
24 Collision With Traffic Gate
25 Collision With Crash Attenuators
26 Collision With Fixed Object Above Road
27 MV Hit Other Fixed Object
28 Collision With Movable Object On Road
29 MV Ran Into Ditch/Culvert
30 Ran Off Road Into Water
31 Overturned
32 Occupant Fell From Vehicle
33 Tractor/Trailer Jackknifed
34 Fire
35 Explosion
77 All Other (Explain)

ROAD SYSTEM IDENTIFIER (03)
01 Interstate
02 U.S.
03 State
04 County
05 Local
06 Turnpike/Toll
07 Forest Road
77 All Other

LIGHTING CONDITION (01)
01 Daylight
02 Dusk
03 Dawn
04 Dark (Street Light)
05 Dark (No Street Light)
06 Unknown

ROAD SURFACE CONDITION (01)
01 Dry
02 Wet
03 Slippery
04 Icy
77 All Other (Explain)

WEATHER (02)
01 Clear
02 Cloudy
03 Rain
04 Fog
77 All Other (Explain)

ROAD SURFACE TYPE (02)
01 Slag/Gravel/Stone
02 Blacktop
03 Brick/Block
04 Concrete
05 Dirt
77 All Other (Explain)

CONTRIBUTING CAUSES - ROAD (01)
01 No Defects
02 Obstruction With/Without Warning
03 Road Under Repair/Construction
04 Loose Surface Materials
05 Shoulders - Soft/Low/High
06 Holes/Ruts/Unsafe Paved Edge
07 Standing Water
08 Worn/Polished Road Surface
77 All Other (Explain)

CONTRIBUTING CAUSES - ENVIRONMENT (01)
01 Vision Not Obscured
02 Inclement Weather
03 Parked/Stopped Vehicle
04 Trees/Crops/Bushes
05 Load on Vehicle
06 Building/Fixed Object
07 Signs/Billboards
08 Fog
09 Smoke
10 Glare
77 All Other (Explain)

TRAFFIC CONTROL (01)
01 No Control
02 Special Speed Zone
03 Traffic Signal
04 Stop Sign
05 Yield Sign
06 Flashing Light
07 Railroad Signal
08 Officer/Guard/Flagman
09 Posted No U-Turn
10 School Zone
77 All Other (Explain)

SITE LOCATION (03)
01 Not At Intersection/RR X-ing/Bridge
02 At Intersection
03 Influenced By Intersection
04 Driveway Access
05 Railroad Crossing
06 Bridge
07 Entrance Ramp
08 Exit Ramp
09 Parking Lot - Public
10 Parking Lot - Private
11 Private Property
77 All Other Explain

TRAFFICWAY CHARACTER (1)
1 Straight-Level
2 Straight-Upgrade/Downgrade
3 Curve-Level
4 Curve-Upgrade/Downgrade

TYPE SHOULDER (2)
1 Paved
2 Unpaved
3 Curb

VIOLATOR	FL STATUTE NUMBER	NAME	CHARGE	CITATION #
1	[redacted]	[redacted]	[redacted] Dov.	[redacted]

BEST AVAILABLE COPY

BEST AVAILABLE COPY

MAIL TO: DEPT. OF HIGHWAY SAFETY & MOTOR VEHICLES
TRAFFIC CRASH RECORDS

EMS PAC FATALS ONLY	TIME EMS NOTIFIED	AM PM	TIME EMS ARRIVED	AM PM	COUNTY/CITY CODE	DATE OF CRASH	INVEST AGENCY PRODUCT NUMBER	HWY CRASH REPORT NUMBER
						93	93	

V-1 WAS EASTBOUND IN THE OUTSIDE THRU LANE ON

V-2 WAS STOPPED FOR TRAFFIC, IN FRONT OF V-1.

D-1 SAID SHE STOPPED, THEN TURNED TO SPEAK TO HER BABY IN THE REAR SEAT. HE FOOT MUST HAVE SLIPPED INTO THE GAS PEDAL, CAUSING HER CAR TO STRIKE V-2.

D-1 INJURED HER LEFT ARM, DUE TO THE AIR BAG ACTIVATING, CAUSING IT TO CRASH INTO THE WINDSHIELD, BREAKING IT. SHE ALSO SUFFERED BURNS FROM THE FRICTION OF THE BAG AND GLASS SPLINTERS FROM THE WINDSHIELD, ON HER LEFT ARM.

WITNESS - NAME	ADDRESS	CITY & STATE	ZIP
1			
WITNESS - NAME	ADDRESS	CITY & STATE	ZIP
2			

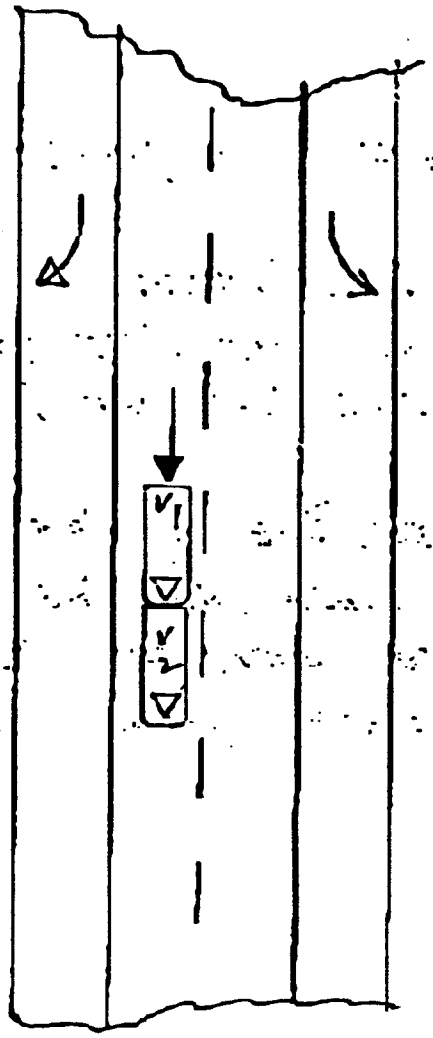
FIRST AID GIVEN BY - NAME:	1 Physician or Nurse 2 Paramedic or EMT 3 Police Officer 4 Certified 1st Aider 5 Other	INJURED TAKEN TO	EY - NAME:
		E.R.	

WAS INVESTIGATION MADE AT SCENE?	IS INVESTIGATION COMPLETE?	CHECK REPORT	PHOTOS TAKEN?	INVEST. AGENCY
YES 2 NO WHERE?	YES 2 NO WHEN?		YES 2 NO	3 INVEST. AGENCY 4 OTHER
INVESTIGATOR - RANK & SIGNATURE	BADGE NUMBER DEPARTMENT			CHP SO PD OTHER

INDICATE NORTH WITH ARROW

[redacted]

EASTBOUND
NOT TO SCALE



[redacted]

DECLINED

APPENDIX B

NASS Vehicle Forms
(1990 Mercedes Benz)

U.S. Department of Transportation
National Highway Traffic Safety Administration

GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - ~~Stratum~~ 93-19
3. Vehicle Number 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year 90
   Code the last two digits of the model year
   (99) Unknown

5. Vehicle Make (specify): 42
   Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
   (99) Unknown

6. Vehicle Model (specify): 031
   Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
   (999) Unknown

7. Body Type 04
   Note: Applicable codes may be found on the back of this page.

8. Vehicle Identification Number
   WDBEA26D3LB_____
   Left justify; Slash zeros and letter Z (Ø and Ƶ)
   No VIN—Code all zeros
   Unknown—Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition 1
   (0) Not towed due to vehicle damage
   (1) Towed due to vehicle damage
   (9) Unknown

10. Police Reported Travel Speed 032
    Code to the nearest kph (NOTE: 000 means less than 0.5 kph)
    (160) 159.5 kph and above
    (999) Unknown
    20 mph X 1.6093 = ___ kph

11. Police Reported Alcohol Presence 0
    (0) No alcohol present
    (1) Yes (alcohol present)
    (7) Not reported
    (8) No driver present
    (9) Unknown

    Note: See variables 37 through 55 (Page 4) for information on Other Drugs

12. Alcohol Test Result For Driver 96
    Code actual value (decimal implied before first digit—0.xx)
    (95) Test refused
    (96) None given
    (97) AC test performed, results unknown
    (98) No driver present
    (99) Unknown

    Source: _____

ACCIDENT RELATED

13. Speed Limit 072
    (000) No statutory limit
    Code posted or statutory speed limit in kph
    (999) Unknown
    45 mph X 1.6093 = 072 kph

14. Attempted Avoidance Maneuver 01
    (00) No impact
    (01) No avoidance actions
    (02) Braking (no lockup)
    (03) Braking (lockup)
    (04) Braking (lockup unknown)
    (05) Releasing brakes
    (06) Steering left
    (07) Steering right
    (08) Braking and steering left
    (09) Braking and steering right
    (10) Accelerating
    (11) Accelerating and steering left
    (12) Accelerating and steering right
    (97) No driver present
    (98) Other action (specify):
    (99) Unknown

15. Accident Type 20
    Applicable codes may be found on the back of page two of this field form
    (00) No impact
    Code the number of the diagram that best describes the accident circumstance
    (98) Other accident type (specify):
    (99) Unknown

****** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ******

OCCUPANT RELATED

16. Driver Presence in Vehicle: 1
(0) Driver not present
(1) Driver present
(9) Unknown

17. Number of Occupants This Vehicle: 02
(00-96) Code actual number of occupants for this vehicle
(97) 97 or more
(99) Unknown

18. Number of Occupant Forms Submitted: 02

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight: 5,300
____Code weight to nearest 10 kilograms.
(045) Less than 450 kilograms
(610) 6,100 kilograms or more
(999) Unknown

3,315 lbs X .4536 = 5,337 kgs

Source: [redacted]

20. Vehicle Cargo Weight: 0,000
____Code weight to nearest 10 kilograms.
(000) Less than 5 kilograms
(450) 4,500 kilograms or more
(999) Unknown

__,___ lbs X .4536 = __,___ kgs

RECONSTRUCTION DATA

21. Towed Trailing Unit: 0
(0) No towed unit
(1) Yes—towed trailing unit
(9) Unknown

22. Documentation of Trajectory Data for This Vehicle: 0
(0) No
(1) Yes

23. Post Collision Condition of Tree or Pole (For Highest Delta V): 0
(0) Not collision (for highest delta V) with tree or pole
(1) Not damaged
(2) Cracked/sheared
(3) Tilted <45 degrees
(4) Tilted ≥45 degrees
(5) Uprooted tree
(6) Separated pole from base
(7) Pole replaced
(8) Other (specify):

(9) Unknown

24. Rollover: 0
(0) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)
(1) Rollover, 1 quarter turn only
(2) Rollover, 2 quarter turns
(3) Rollover, 3 quarter turns
(4) Rollover, 4 or more quarter turns (specify):

(5) Rollover--end-over-end (i.e., primarily about the lateral axis)
(9) Rollover (overturn), details unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle): 0

26. Rear Override/Underride (this Vehicle): 0

(0) No override/underride, or not an end-to-end impact

Override (see specific CDC)
(1) 1st CDC
(2) 2nd CDC
(3) Other not automated CDC (specify):

Underride (see specific CDC)
(4) 1st CDC
(5) 2nd CDC
(6) Other not automated CDC (specify):

(7) Medium/heavy truck or bus override
(9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
(997) Noncollision
(998) Impact with object
(999) Unknown

27. Heading Angle For This Vehicle: ___

28. Heading Angle For Other Vehicle: ___

29. Basis for Total Delta V (highest) ____

Delta V Calculated
(1) CRASH program—damage only routine
(2) CRASH program—damage and trajectory routine
(3) Missing vehicle algorithm

Delta V Not Calculated
(4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
(5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
(6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

	Secondary	Highest
30. Total Delta V	999	
____ Nearest kph		

(NOTE: 000 means less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown

	Secondary	Highest
31. Longitudinal Component of Delta V	⊕ − 999	
____ Nearest kph		

(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

	Secondary	Highest
32. Lateral Component of Delta V	⊕ − 999	
____ Nearest kph		

(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

33. Energy Absorption 999,900

____ Nearest 100 joules ____

(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

34. Confidence In Reconstruction Program Results (For Highest Delta V) 0
(0) No reconstruction
(1) Collision fits model — results appear reasonable
(2) Collision fits model — results appear high
(3) Collision fits model — results appear low
(4) Borderline reconstruction — results appear reasonable

35. Type of Vehicle Inspection 1
(0) No inspection
(1) Complete inspection
(2) Partial inspection (specify): ____

36. Is this an AOPS Vehicle? 1
(0) No
(1) Yes - researcher determined
(2) VIN determined air bag system
(3) VIN determined automatic (passive) belts
(4) VIN determined air bag and automatic (passive) belts

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [ ] YES [✓] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [ ] YES [ ] NO

37. Police Reported Other Drug Presence 0
(0) No other drugs present
(1) Yes (other drug present)
(7) Not reported
(8) No driver present
(9) Unknown

38. Police Reported Drug Evaluation Classification (DEC) Test For Driver 0
(0) No DEC process available or given
(1) DEC process given, results known
(2) DEC process given, results unknown
(3) DEC process available, unknown if given
(8) No driver present

39. Other Drug Specimen Test Type For Driver 0
(0) No specimen test given
(1) Blood test
(2) Urine test
(3) Other specimen tests (specify): _____
(7) Unspecified specimen test
(8) No driver present
(9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION
OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC Test Results	Specimen Test Results
Narcotic Drug	40. 0	41. 0
Depressant Drug	42. 0	43. 0
Stimulant Drug	44. 0	45. 0
Hallucinogen Drug	46. 0	47. 0
Cannabinoid Drug	48. 0	49. 0
Phencyclidine (PCP)	50. 0	51. 0
Inhalant Drug	52. 0	53. 0
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. 0	55. 0

Codes For DEC Test Results

(0) No DEC test given
(1) Passed DEC test
(2) Failed DEC test
(3) DEC test given—results unknown
(8) No driver present
(9) Unknown if DEC test given

Codes for Specimen Test Results

(0) No specimen test given
(1) Drug not found in specimen
(2) Drug found in specimen
(7) Specimen test given, results unknown or not obtained
(8) No driver present
(9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code [redacted]

(00000) Driver not present
(00001) Driver not a resident of U.S. or territories
_____ Code actual 5-digit zip code
(99999) Unknown

57. Driver's Race/Ethnic Origin 1
(0) Driver not present
(1) White (non-Hispanic)
(2) Black (non-Hispanic)
(3) White (Hispanic)
(4) Black (Hispanic)
(5) American Indian, Eskimo or Aleut
(6) Asian or Pacific Islander
(8) Other (specify): _____
(9) Unknown

58. Vehicle Special Use (This Trip) 0
(0) No special use
(1) Taxi
(2) Vehicle used as school bus
(3) Vehicle used as other bus
(4) Military
(5) Police
(6) Ambulance
(7) Fire truck or car
(8) Other (specify): _____
(9) Unknown

ROLLOVER DATA

If GV07 (Body Type) ≠ 1-49, leave GV59-GV63 blank.
If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type 0
(0) No rollover
(1) Trip-over
(2) Flip-over
(3) Turn-over
(4) Climb-over
(5) Fall-over
(6) Bounce-over
(7) Collision with another vehicle
(8) Other rollover initiation type specify): _____
(9) Unknown rollover initiation type

60. Location of Rollover Initiation 0
(0) No rollover
(1) On roadway
(2) On shoulder—paved
(3) On shoulder—unpaved
(4) On roadside or divided trafficway median
(9) Unknown

61. Rollover Initiation Object Contacted 00

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied 0
(0) No rollover
(1) Wheels/tires
(2) Side plane
(3) End plane
(4) Undercarriage
(5) Other location on vehicle (specify): _____
(8) Non-contact rollover forces (specify): _____
(9) Unknown

63. Direction of Initial Roll 0
(0) No rollover
(1) Roll right - primarily about the longitudinal axis
(2) Roll left - primarily about the longitudinal axis
(5) End-over-end (i.e., primarily about the lateral axis)
(9) Unknown roll direction

PRECRASH DATA

64. Pre-Event Movement (Prior to Recognition of Critical Event) 02
(01) Going straight
(02) Slowing or stopping in traffic lane
(03) Starting in traffic lane
(04) Stopped in traffic lane
(05) Passing or overtaking another vehicle
(06) Disabled or parked in travel lane
(07) Leaving a parking position
(08) Entering a parking position
(09) Turning right
(10) Turning left
(11) Making a U-turn
(12) Backing up (other than for parking position)
(13) Negotiating a curve
(14) Changing lanes
(15) Merging
(16) Successful avoidance maneuver to a previous critical event
(97) Other (specify): _____
(98) No driver present
(99) Unknown

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

(00) No rollover
(01-30) — Vehicle Number

Noncollision
(31) Turn-over — fall-over
(33) Jackknife

Collision With Fixed Object
(41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
(50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail) (specify):_____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

_____
(69) Unknown fixed object

Collision with Nonfixed Object
(71) Motor vehicle not in-transport
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(88) Other nonfixed object (specify):

_____
(89) Unknown nonfixed object

(98) Other event (specify):

_____
(99) Unknown event or object

PRECRASH DATA (Continued)

65. Critical Precrash Event 50

This Vehicle Loss of Control Due To:
(01) Blow out or flat tire
(02) Stalled engine
(03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
(04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
(05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
(06) Traveling too fast for conditions
(08) Other cause of control loss (specify): _____
(09) Unknown cause of control loss

This Vehicle Traveling
(10) Over the lane line on left side of travel lane
(11) Over the lane line on right side of travel lane
(12) Off the edge of the road on the left side
(13) Off the edge of the road on the right side
(14) End departure
(15) Turning left at intersection
(16) Turning right at intersection
(17) Crossing over (passing through) intersection
(19) Unknown travel direction

Other Motor Vehicle In Lane
(50) Stopped
(51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
(52) Traveling in same direction with higher speed
(53) Traveling in opposite direction
(54) In crossover
(55) Backing
(59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane
(60) From adjacent lane (same direction)—over left lane line
(61) From adjacent lane (same direction)—over right lane line
(62) From opposite direction—over left lane line
(63) From opposite direction—over right lane line
(64) From parking lane
(65) From crossing street, turning into same direction
(66) From crossing street, across path
(67) From crossing street, turning into opposite direction
(68) From crossing street, intended path not known
(70) From driveway, turning into same direction
(71) From driveway, across path
(72) From driveway, turning into opposite direction
(73) From driveway, intended path not known
(74) From entrance to limited access highway
(78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist
(80) Pedestrian in roadway
(81) Pedestrian approaching roadway
(82) Pedestrian - unknown location
(83) Pedalcyclist or other nonmotorist in roadway (specify): _____
(84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
(85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal
(87) Animal in roadway
(88) Animal approaching roadway
(89) Animal—unknown location
(90) Object in roadway
(91) Object approaching roadway
(92) Object—unknown location

(98) Other critical precrash event (specify): _____
(99) Unknown

For Corrective Actions Attempted see variable GV14 (Attemped Avoidance Manuever)

66. Precrash Stability After Avoidance Maneuver 0
(0) No avoidance maneuver
(1) Tracking
(2) Skidding longitudinally—rotation less than 30 degrees
(3) Skidding laterally—clockwise rotation
(4) Skidding laterally—counterclockwise rotation
(7) Other vehicle loss-of-control (specify): _____
(8) No driver present
(9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Maneuver (Corrective Action) 0
(0) No avoidance maneuver
(1) Vehicle stayed in travel lane where avoidance maneuver was initiated
(2) Vehicle stayed on roadway but left travel lane where avoidance maneuver was initiated
(3) Vehicle stayed on roadway, not known if left travel lane where avoidance maneuver was initiated
(4) Vehicle departed roadway
(5) Avoidance maneuver initiated off roadway
(8) No driver present
(9) Directional consequences unknown

***** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35=0), *****
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

***** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE *****
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

U.S. Department of Transportation

National Highway Traffic Safety Administration

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - ~~Stratum~~ 9319
3. Vehicle Number 01

VEHICLE IDENTIFICATION

VIN WDBEA26D3LB_____ Model Year 90

Vehicle Make (specify): MERCEDES-BENZ Vehicle Model (specify): 300E

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	VERTICAL CREASE ON BUMPER FACIA 49-55cm (19 7/16-21 1/2") LEFT OF CENTER	

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

Specific Impact Number	Plane of Impact C-Measurements	Direct Damage		Field L	C_1	C_2	C_3	C_4	C_5	C_6	±D
		Width (CDC)	Max Crush								
1				ND	RESIDUAL		CRUSH				

HS Form 435A (Rev. 1/93)

ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase	110.2	inches	x 2.54	=	280	cm
Overall Length	187.2	inches	x 2.54	=	475	cm
Maximum Width	68.5	inches	x 2.54	=	174	cm
Curb Weight	3,315	pounds	x .4536	=	1,492	kg
Average Track	58.4	inches	x 2.54	=	148	cm
Front Overhang	___.___	inches	x 2.54	=	___	cm
Rear Overhang	___.___	inches	x 2.54	=	___	cm
Undeformed End Width	___.___	inches	x 2.54	=	___	cm
Engine Size: cyl./displ.	____	cc	x .001	=	___.___	L
	___	CID	x .0164	=	3.0	L

VEHICLE DAMAGE SKETCH

TIRE—WHEEL DAMAGE

a. Rotation physically restricted

RF 2
LF 2
RR 2
LR 2

b. Tire deflated

RF 2
LF 2
RR 2
LR 2

(1) Yes (2) No (8) NA (9) Unk.

TYPE OF TRANSMISSION

☐ Manual ☒ Automatic

ORIGINAL SPECIFICATIONS

Wheelbase	280	cm
Overall Length	475	cm
Maximum Width	174	cm
Curb Weight	1492	kg
Average Track	148	cm
Front Overhang		cm
Rear Overhang		cm
Undeformed End Width		cm
Engine Size: cyl./displ.	3.0, V-6	L

WHEEL STEER ANGLES

(For locked front wheels or displaced rear axles only)

RF ± ___ ___ o
LF ± ___ ___ o
RR ± ___ ___ o
LR ± ___ ___ o

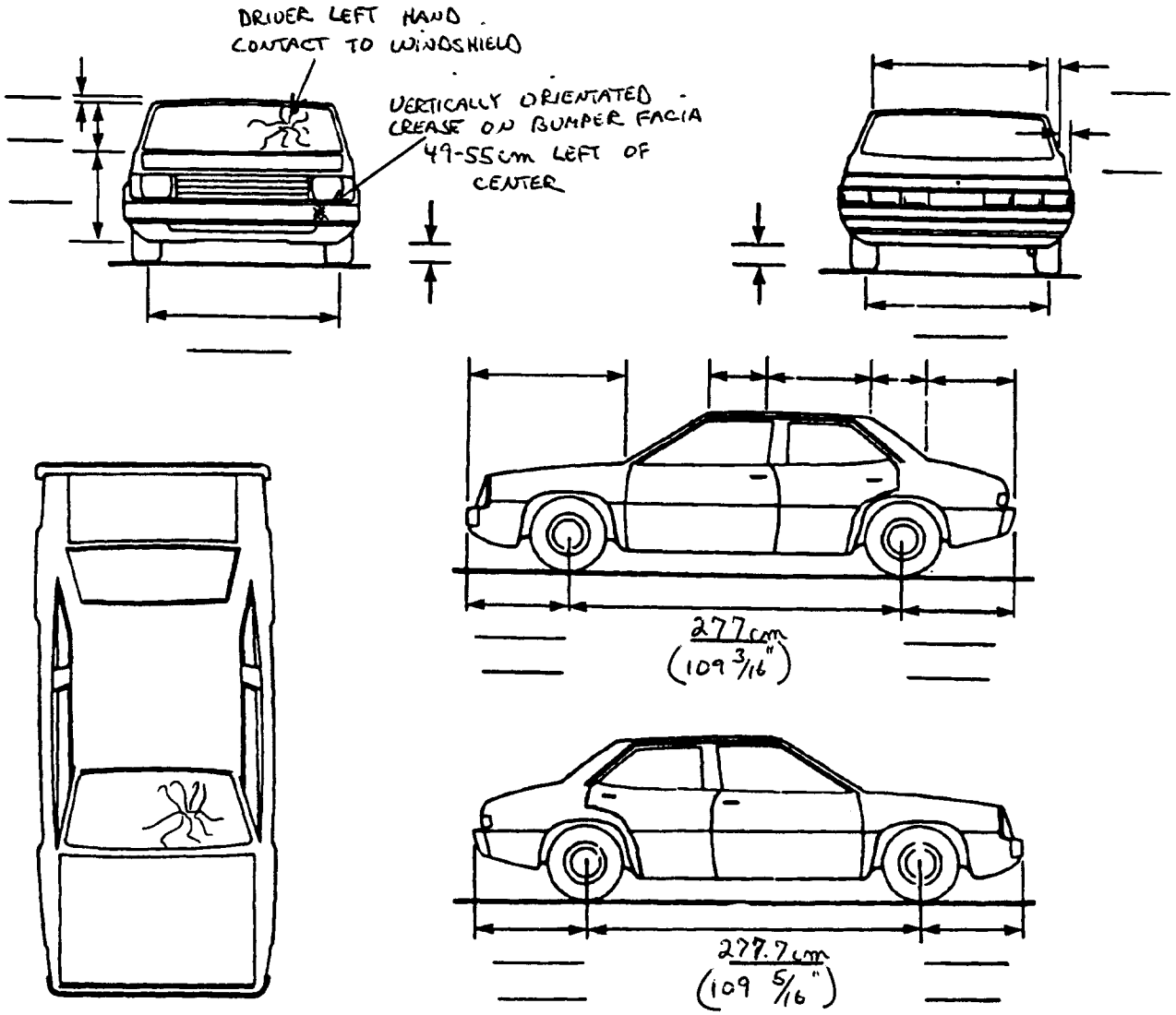
Within ± 5 degrees

DRIVE WHEELS

☐ FWD ☒ RWD ☐ 4WD

Approximate Cargo Weight N/A kg

MEASUREMENTS IN CENTIMETERS



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision
- (31) Overturn — rollover
- (32) Fire or explosion
- (33) Jackknife
- (34) Other intraunit damage (specify): _____
- (35) Noncollision injury
- (38) Other noncollision (specify): _____
- (39) Noncollision — details unknown

Collision With Fixed Object
- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment
- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail) (specify): _____
- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____
- (69) Unknown fixed object

Collision with Nonfixed Object
- (71) Motor vehicle not in-transport
- (72) Pedestrian
- (73) Cyclist or cycle
- (74) Other nonmotorist or conveyance
- (75) Vehicle occupant
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (88) Other nonfixed object (specify): _____
- (89) Unknown nonfixed object
- (98) Other event (specify): _____
- (99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	02	360	00	F	Y	E	W	01

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. 01	5. 02	6. 12	7. F	8. Y	9. E	10. W	11. 01

Second Highest Delta "V"

12.	13.	14.	15.	16.	17.	18.	19.

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

NO RESIDUAL CRUSH

20. L	21. C_1	C_2	C_3	C_4	C_5	C_6	22. ±D
							+ −

Second Highest Delta "V"

23. L	24. C_1	C_2	C_3	C_4	C_5	C_6	25. ±D
							+ −

26. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 280
110.3 Code to the nearest centimeter
(999) Unknown

110.3 inches X 2.54 = 280 centimeters

29. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? 0
(0) No post manufacturer modifications
(1) Yes - post manufacturer modifications (specify): _____
_____
_____
(Include photograph of CERTIFICATION PLACARD in case report)
(9) Unknown if vehicle is modified

30. Fire Occurrence 0
(0) No fire

Yes, fire occurred
(1) Minor
(2) Major
(9) Unknown

31. Origin of Fire 0
(0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify): _____
(9) Unknown

32. Type of Fuel Tank 1
(0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS *** (I.E., GV09=0 OR 9 AND GV36=0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation
National Highway Traffic Safety Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - ~~Stratum~~ ____ ____
3. Vehicle Number 01

INTEGRITY

4. Passenger Compartment Integrity 00
   (00) No integrity loss

   Yes, Integrity Was Lost Through
   (01) Windshield
   (02) Door (side)
   (03) Door/hatch (back door)
   (04) Roof
   (05) Roof glass
   (06) Side window
   (07) Rear window (backlight)
   (08) Roof and roof glass
   (09) Windshield and door (side)
   (10) Windshield and roof
   (11) Side and rear window (side window and backlight)
   (12) Windshield and side window
   (13) Door and side window
   (98) Other combination of above (specify): _____
   (99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 0

   (0) No door/gate/hatch
   (1) Door/gate/hatch remained closed and operational
   (2) Door/gate/hatch came open during collision
   (3) Door/gate/hatch jammed shut
   (8) Other (specify): _____
   (9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then code Ø

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

   (0) No door/gate/hatch or door not opened

   Door, Tailgate or Hatch Came Open During Collision
   (1) Door operational (no damage)
   (2) Latch/striker failure due to damage
   (3) Hinge failure due to damage
   (4) Door structure failure due to damage
   (5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage
   (6) Latch/striker and hinge failure due to damage
   (8) Other failure (specify): _____
   (9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 2 16. LF 0 17. RF 0 18. LR 0 19. RR 0
20. BL 0 21. Roof 8 22. Other 8

   (0) No glazing damage from impact forces
   (2) Glazing in place and cracked from impact forces
   (3) Glazing in place and holed from impact forces
   (4) Glazing out-of-place (cracked or not) and not holed from impact forces
   (5) Glazing out-of-place and holed from impact forces
   (6) Glazing disintegrated from impact forces
   (7) Glazing removed prior to accident
   (8) No glazing
   (9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 2 24. LF 0 25. RF 0 26. LR 0 27. RR 0
28. BL 0 29. Roof 0 30. Other 0

   (0) No occupant contact to glazing or no glazing
   (1) Glazing contacted by occupant but no glazing damage
   (2) Glazing in place and cracked by occupant contact
   (3) Glazing in place and holed by occupant contact
   (4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact
   (5) Glazing out-of-place by occupant contact and holed by occupant contact
   (6) Glazing disintegrated by occupant contact
   (9) Unknown if contacted by occupant

If No Glazing Damage *And* No Occupant Contact or No Glazing, Then Code IV31 Through IV46 As Ø

Type of Window/Windshield Glazing

31. WS 1 32. LF 2 33. RF 2 34. LR 2 35. RR 2
36. BL 2 37. Roof 0 38. Other 0

   (0) No glazing contact and no damage, or no glazing
   (1) AS-1 — Laminated
   (2) AS-2 — Tempered
   (3) AS-3 — Tempered-tinted
   (4) AS-14 — Glass/Plastic
   (8) Other (specify): _____
   (9) Unknown

Window Precrash Glazing Status

39. WS 1 40. LF 2 41. RF 2 42. LR 2 43. RR 2
44. BL 1 45. Roof 0 46. Other 0

   (0) No glazing contact and no damage, or no glazing
   (1) Fixed
   (2) Closed
   (3) Partially opened
   (4) Fully opened
   (9) Unknown

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47.___ ___	48.___ ___	49.___	50.___
2nd	51.___ ___	52.___ ___	53.___	54.___
3rd	55.___ ___	56.___ ___	57.___	58.___
4th	59.___ ___	60.___ ___	61.___	62.___
5th	63.___ ___	64.___ ___	65.___	66.___
6th	67.___ ___	68.___ ___	69.___	70.___
7th	71.___ ___	72.___ ___	73.___	74.___
8th	75.___ ___	76.___ ___	77.___	78.___
9th	79.___ ___	80.___ ___	81.___	82.___
10th	83.___ ___	84.___ ___	85.___	86.___

LOCATION OF INTRUSION

Front Seat
- (11) Left
- (12) Middle
- (13) Right

Second Seat
- (21) Left
- (22) Middle
- (23) Right

Third Seat
- (31) Left
- (32) Middle
- (33) Right

Fourth Seat
- (41) Left
- (42) Middle
- (43) Right

- (97) Catastrophic
- (98) Other enclosed area (specify) _____
- (99) Unknown

INTRUDING COMPONENT

Interior Components
- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel (side)
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan (includes sill)
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back door/panel (e.g., tailgate)
- (26) Other interior component (specify): _____
- (27) Side panel - forward of the A (A2)-pillar
- (28) Side panel - rear of the A (A2)-pillar

NO INTRUSION

Exterior Components
- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

MAGNITUDE OF INTRUSION
- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION
- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

STEERING COLUMN

87. Steering Column Type — 1
(1) Fixed column
(2) Tilt column
(3) Telescoping column
(4) Tilt and telescoping column
(8) Other column type (specify): _____
(9) Unknown

88. Blank — X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

89. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

90. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

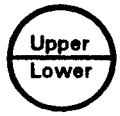
91. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

92. Steering Rim/Spoke Deformation — 0 0
_____Code actual measured deformation to the nearest centimeter
(00) No steering rim deformation
(01-14) Actual measured value in centimeters
(15) 15 centimeters or more
(98) Observed deformation cannot be measured
(99) Unknown

93. Location of Steering Rim/Spoke Deformation — 0 0
(00) No steering rim deformation

Quarter Sections
(01) Section A
(02) Section B
(03) Section C
(04) Section D

Half Sections
(05) Upper half of rim/spoke
(06) Lower half of rim/spoke
(07) Left half of rim/spoke
(08) Right half of rim/spoke



(09) Complete steering wheel collapse
(10) Undetermined location
(99) Unknown

INSTRUMENT PANEL

94. Odometer Reading — 0 8 1 ,000
_____kilometers—Code to the nearest 1,000 kilometers
(000) No odometer
(001) Less than 1,500 kilometers
(500) 499,500 kilometers or more
(999) Unknown

50,324 miles X 1.6093 = 81,022 kilometers

Source: _____

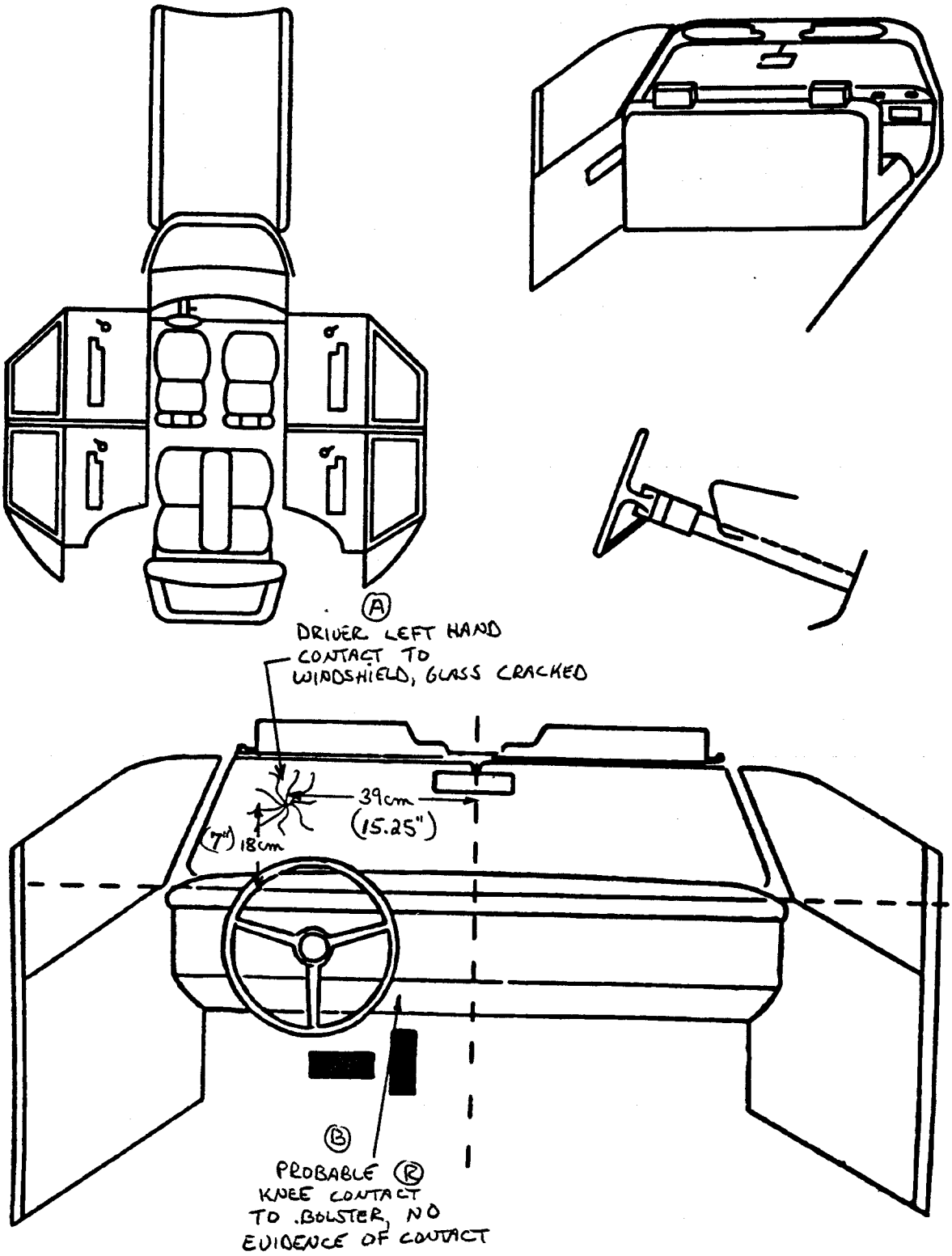
95. Instrument Panel Damage from Occupant Contact? — 0
(0) No
(1) Yes
(9) Unknown

96. Knee Bolsters Deformed from Occupant Contact? — 0
(0) No
(1) Yes
(8) Not present
(9) Unknown

97. Did Glove Compartment Door Open During Collision(s)? — 0
(0) No
(1) Yes
(8) Not present
(9) Unknown

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure.
Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.
Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	01	1	(L) HAND	CRACKED WINDSHIELD	1
B	13	1	(R) KNEE	NO EVIDENCE OF CONTACT	2
C	45	1	FACE	LIPSTICK TRANSFER	1
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT
- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify):_____
- (19) Other front object (specify):

LEFT SIDE
- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar
- (23) Left B-pillar
- (24) Other left pillar (specify):
- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (27) Other left side object (specify):
- (28) Left side window sill

RIGHT SIDE
- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify):
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B pillar, or roof side rail.
- (37) Other right side object (specify):
- (38) Right side window sill

INTERIOR
- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify):_____
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
- (46) Other occupants (specify):
- (47) Interior loose objects
- (48) Child safety seat (specify):
- (49) Other interior object (specify):

ROOF
- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR
- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR
- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify):

CONFIDENCE LEVEL OF CONTACT POINT
- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
FIRST	Availability/Function	1	0
	Deployment	1	0
	Failure	1	0

Air Bag System Availability/Function
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify): _____
(3) Air bag not reinstalled
(9) Unknown

Air Bag System Deployment
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

Did Air Bag System Fail?
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

AUTOMATIC BELTS

		Left	Right
FIRST	Availability/Function	0	0
	Use	0	0
	Type	0	0
	Proper Use	0	0
	Failure Modes	0	0

Automatic (Passive) Belt System Availability/Function
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

Automatic (Passive) Belt System Use
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

Automatic (Passive) Belt System Type
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

Proper Use of Automatic (Passive) Belt System
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of automatic belt system (specify): _____
(9) Unknown

Automatic (Passive) Belt Failure Modes During Accident
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify): _____
(9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data **for each seat position** in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Ocupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	-	4
	Use	00	-	-
	Failure Modes	0	-	-
SECOND	Availability	4	3	4
	Use	-	03	-
	Failure Modes	-	1	-
THIRD	Availability			
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available - type unknown

Integral Belt Partially Destroyed

(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)
(8) Other belt (specify): _____
(9) Unknown

Manual (Active) Belt System Use

(00) None used, not available, or belt removed/destroyed
(01) Inoperable (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used - type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat - type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

(0) No manual belt used or not available
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number	02					
1. Type of Child Safety Seat	4					
2. Child Safety Seat Orientation	02					
3. Child Safety Seat Harness Usage	03					
4. Child Safety Seat Shield Uasge	03					
5. Child Safety Seat Tether Usage	03					
6. Child Safety Seat Make/Model	UNKDOWN	Specify Below for Each Child Safety Seat				

1. Type of Child Safety Seat
   - (0) No child safety seat
   - (1) Infant seat
   - (2) Toddler seat
   - (3) Convertible seat
   - (4) Booster seat
   - (7) Other type child safety seat (specify): _____
   - (8) Unknown child safety seat type
   - (9) Unknown if child safety seat used

2. Child Safety Seat Orientation
   - (00) No child safety seat

   Designed for Rear Facing for This Age/Weight
   - (01) Rear facing
   - (02) Forward facing
   - (08) Other orientation (specify): _____
   - (09) Unknown orientation

   Designed for Forward Facing for This Age/Weight
   - (11) Rear facing
   - (12) Forward facing
   - (18) Other orientation (specify): _____
   - (19) Unknown orientation

   Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
   - (21) Rear facing
   - (22) Forward facing
   - (28) Other orientation (specify): _____
   - (29) Unknown orientation
   - (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage
   Note: Options Below Are Used for Variables 3-5.
   - (00) No child safety seat

   Not Designed with Harness/Shield/Tether
   - (01) After market harness/shield/tether added, not used
   - (02) After market harness/shield/tether used
   - (03) Child safety seat used, but no after market harness/shield/tether added
   - (09) Unknown if harness/shield/tether added or used

   Designed With Harness/Shield/Tether
   - (11) Harness/shield/tether not used
   - (12) Harness/shield/tether used
   - (19) Unknown if harness/shield/tether used

   Unknown If Designed With Harness/Shield/Tether
   - (21) Harness/shield/tether not used
   - (22) Harness/shield/tether used
   - (29) Unknown if harness/shield/tether used

   - (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model
   (Specify make/model and occupant number)

   _____

   _____

   _____

   _____

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for **each seat position** in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	01	-	01
	Seat Performance	1	-	1
	Seat Orientation	1	-	1
SECOND	Head Restraint Type/Damage	0	0	0
	Seat Type	03	03	03
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

(0) No head restraints
(1) Integral — no damage
(2) Integral — damaged during accident
(3) Adjustable — no damage
(4) Adjustable — damaged during accident
(5) Add-on — no damage
(6) Add-on — damaged during accident
(8) Other Specify): _____
(9) Unknown

Seat Type (this Occupant Position)

(00) Occupant not seated or no seat
(01) Bucket
(02) Bucket with folding back
(03) Bench
(04) Bench with separate back cushions
(05) Bench with folding back(s)
(06) Split bench with separate back cushions
(07) Split bench with folding back(s)
(08) Pedestal (i.e., column supported)
(09) Other seat type (specify): _____
(10) Box mounted seat (i.e., van type)
(99) Unknown

Seat Performance (this Occupant Position)

(0) Occupant not seated or no seat
(1) No seat performance failure(s)
(2) Seat adjusters failed
(3) Seat back folding locks or "seat back" failed specify: _____
(4) Seat tracks/anchors failed
(5) Deformed by impact of occupant
(6) Deformed by passenger compartment intrusion (specify): _____
(7) Combination of above (specify): _____
(8) Other (specify): _____
(9) Unknown

Seat Orientation (this Occupant Position)

(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify): _____
(9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occpant Assessment Form.

EJECTION No [✓] Yes [ ]

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection
(1) Complete ejection
(1) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.) (specify): _____
(9) Unknown

Ejection Medium
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown

Medium Status (Immediately Prior to Impact)
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [✓] Yes [ ]

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

APPENDIX C

NASS Occupant Forms
(1990 Mercedes-Benz 300E)

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number ~~– Stratum~~ 93-19
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 32
   Code actual age at time of accident.
   (00) Less than one year old (specify by month): _____
   (97) 97 years and older
   (99) Unknown

6. Occupant's Sex 2
   (1) Male
   (2) Female
   (9) Unknown

7. Occupant's Height 159
   Code actual height to the nearest centimeter.
   (999) Unknown

   62.5 inches X 2.54 = 159 centimeters

8. Occupant's Weight 061
   Code actual weight to the nearest kilogram.
   (999) Unknown

   135 pounds X .4536 = 061 kilograms

9. Occupant's Role 1
   (1) Driver
   (2) Passenger
   (9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 11
    Front Seat
    (11) Left side
    (12) Middle
    (13) Right side
    (14) Other (specify): _____
    (15) On or in the lap of another occupant

    Second Seat
    (21) Left side
    (22) Middle
    (23) Right side
    (24) Other (specify): _____
    (25) On or in the lap of another occupant

    Third Seat
    (31) Left side
    (32) Middle
    (33) Right side
    (34) Other (specify): _____
    (35) On or in the lap of another occupant

    Fourth Seat
    (41) Left side
    (42) Middle
    (43) Right side
    (44) Other (specify): _____
    (45) On or in the lap of another occupant

    (97) In or on unenclosed area
    (98) Other seat (specify): _____
    (99) Unknown

11. Occupant's Posture 8
    (0) Normal posture

    Abnormal posture
    (1) Kneeling or standing on seat
    (2) Lying on or across seat
    (3) Kneeling, standing or sitting in front of seat
    (4) Sitting sideways or turned to talk with another occupant or to look out a rear window
    (5) Sitting on a console
    (6) Lying back in a reclined seat position
    (7) Bracing with feet or hands on a surface in front of seat
    (8) Other abnormal posture (specify):
    ROTATED C.W. BETWEEN FRONT SEATS
    (9) Unknown

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EJECTION/ENTRAPMENT

12. Ejection 0
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area 0
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium 0
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment 0
    (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
    (0) Not entrapped
    (1) Entrapped
    (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____
(9) Unknown

18. Manual (Active) Belt System Use 00
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 0
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of manual belt system (specify): _____
(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 0
(0) No manual belt used
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

21. Air Bag System Availability/Function 1
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify): _____
(3) Air bag not reinstalled
(9) Unknown

22. Air Bag System Deployment 1
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

23. Are There Indications of Air Bag System Failure? 1
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use 7
(0) None used
(1) Police did not indicate restraint use
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt used, type not specified
(6) Child safety seat
(7) Other or automatic restraint (specify): AIR BAG & SEAT BELT
(8) Restrained, type unknown
(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position: 3
    (0) No head restraints
    (1) Integral—no damage
    (2) Integral—damaged during accident
    (3) Adjustable—no damage
    (4) Adjustable—damaged during accident
    (5) Add-on—no damage
    (6) Add-on—damaged during accident
    (8) Other (specify): _____
    (9) Unknown

26. Seat Type (this Occupant Position): 01
    (00) Occupant not seated or no seat
    (01) Bucket
    (02) Bucket with folding back
    (03) Bench
    (04) Bench with separate back cushions
    (05) Bench with folding back(s)
    (06) Split bench with separate back cushions
    (07) Split bench with folding back(s)
    (08) Pedestal (i.e., column supported)
    (09) Other seat type (specify): _____
    (10) Box mounted seat (i.e., van type)
    (99) Unknown

27. Seat Performance (this Occupant Position): 1
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion (specify): _____
    (7) Combination of above (specify): _____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 0 0 0
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify):
_____
(998) Unknown make/model
(999) Unknown if child safety seat used

29. Type of Child Safety Seat 0
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat
(7) Other type child safety seat (specify):
_____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

30. Child Safety Seat Orientation 0 0
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify):
_____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify):
_____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify):
_____
(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0 0

32. Child Safety Seat Shield Usage 0 0

33. Child Safety Seat Tether Usage 0 0

Note: Options below applicable to Variables OA31-OA33.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

34. Injury Severity (Police Rating) 2

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

35. Treatment - Mortality 4

(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):

_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(8) Treatment - other (specify):

_____

(9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 2

(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):

_____

(9) Unknown

37. Hospital Stay 0 0

(00) Not Hospitalized
____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

38. Working Days Lost 9 9

____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7

VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER

39. Time to Death 0 0

____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

40. 1st Medically Reported Cause of Death 0 0

41. 2nd Medically Reported Cause of Death 0 0

42. 3rd Medically Reported Cause of Death 0 0

____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(97) Other result (includes fatal ruled disease) (specify):

_____

(99) Unknown

43. Number of Recorded Injuries for This Occupant 0 8

____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

AUTOMATIC BELT SYSTEM

44. Automatic (Passive) Belt System Availability/ Function [0]
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

45. Automatic (Passive) Belt System Use [0]
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):

(3) Automatic belt use unknown
(9) Unknown

46. Automatic (Passive) Belt System Type [0]
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

47. Proper Use of Automatic (Passive Belt System [0]
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident [0]
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

49. Seat Orientation (this Occupant Position) [1]
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):

(9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA

50. Glasgow Coma Scale (GCS) Score (at Medical Facility) [02]
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

51. Was the Occupant Given Blood? [1]
(1) No - blood not given
(2) Yes - blood given
(specify units):
(9) Unknown if blood given

52. Arterial Blood Gases (ABG) – HCO_3 [01]
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION? NO [ ] YES [ ]

UPDATE CANDIDATE? NO [ ] YES [ ]

U.S. Department of Transportation

National Highway Traffic Safety Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~		3. Vehicle Number	01
2. Case Number - ~~Stratum~~	93-19	4. Occupant Number	01

INJURY DATA

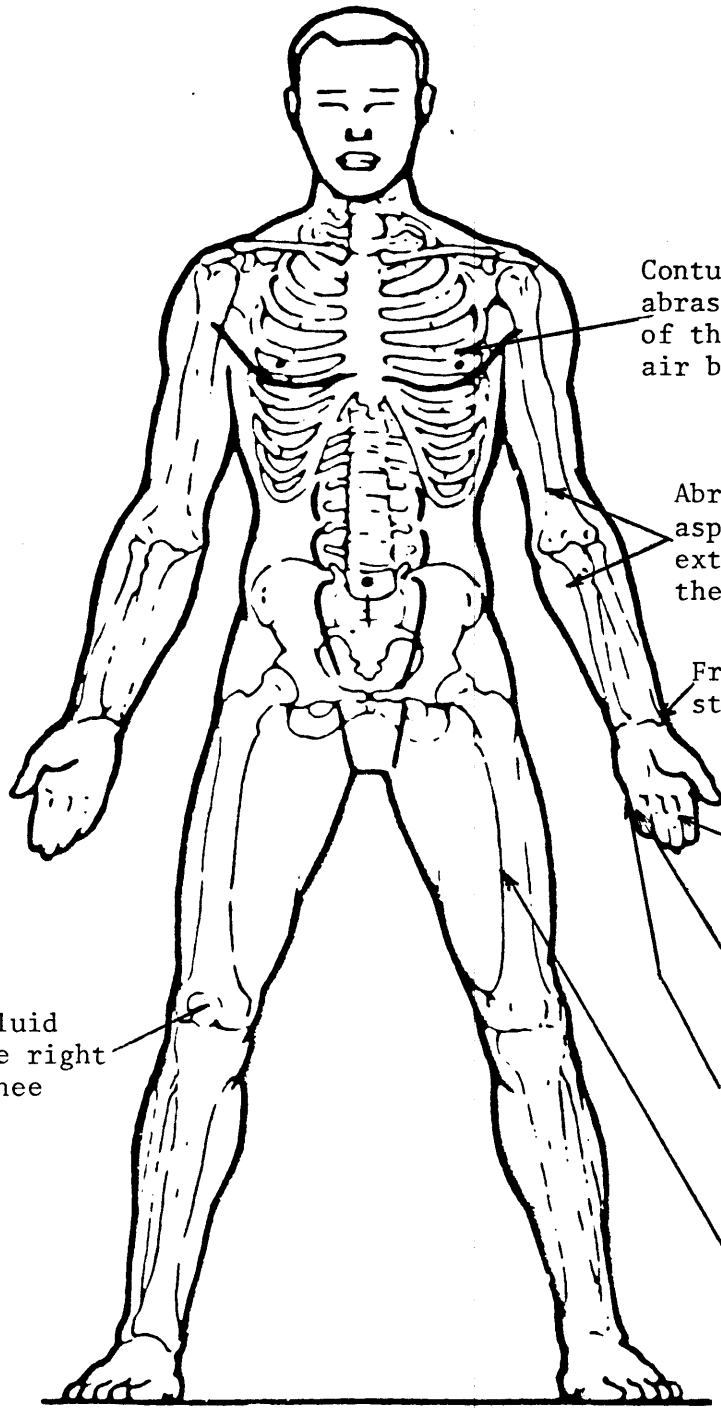
Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	O.I.C.-A.I.S Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
1st	5. 3	6. 7	7. 5	8. 28	9. 00	10. 2	11. 2	12. 01	13. 1	14. 1	15. 00
2nd	16. 7	17. 8	18. 9	19. 04	20. 02	21. 1	22. 2	23. 04	24. 1	25. 1	26. 00
3rd	27. 3	28. 7	29. 9	30. 02	31. 02	32. 1	33. 2	34. 45	35. 1	36. 1	37. 00
4th	38. 3	39. 4	40. 9	41. 02	42. 02	43. 1	44. 2	45. 45	46. 1	47. 1	48. 00
5th	49. 3	50. 4	51. 9	52. 04	53. 02	54. 1	55. 2	56. 45	57. 1	58. 1	59. 00
6th	60. 3	61. 7	62. 9	63. 04	64. 02	65. 1	66. 2	67. 01	68. 1	69. 1	70. 00
7th	71. 3	72. 7	73. 9	74. 04	75. 02	76. 1	77. 2	78. 01	79. 1	80. 1	81. 00
8th	82. 3	83. 7	84. 9	85. 06	86. 02	87. 1	88. 2	89. 01	90. 1	91. 1	92. 00
9th	93.	94.	95.	96.	97.	98.	99.	100.	101.	102.	103.
10th	104.	105.	106.	107.	108.	109.	110.	111.	112.	113.	114.

HS Form 433B (1/93)

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

AGE 32
SEX Female
WT. 61kg(135 lbs
HT. 159cm(62.5"



Contusion with superficial abrasion of the lateral aspect of the left breast (AIS-1), air bag

Abrasion of the anterior aspect of the left arm that extended above and below the elbow (AIS-1), air bag

Fracture of the left radial styloid (AIS-2), windshield

Contusion of the left hand between the index and middle fingers (AIS-1), windshield.

Left fifth finger contused (AIS-1), windshield.

Multiple small laceration of the lateral and dorsal aspect of the left fifth finger and hand (AIS-1), windshield.

Large diameter contusion of the mid anterior thigh (AIS-1), steering wheel rim.

Swelling with fluid retention of the right knee (AIS-0), knee bolster.

SOURCE OF INJURY DATA

OFFICIAL
(1) Autopsy records with or without hospital/ medical records
(2) Hospital/medical records other than emergency room (e.g., discharge summary)
(3) Emergency room records only (including associated X-rays or other lab reports)
(4) Private physician, walk-in or emergency clinic

UNOFFICIAL
(5) Lay coroner report
(6) E.M.S. personnel
(7) Interviewee
(8) Other source (specify):

(9) Police

INJURY SOURCE

FRONT
(01) Windshield
(02) Mirror
(03) Sunvisor
(04) Steering wheel rim
(05) Steering wheel hub/spoke
(06) Steering wheel (combination of codes 04 and 05)
(07) Steering column, transmission selector lever, other attachment
(08) Add on equipment (e.g., CB, tape deck, air conditioner)
(09) Left instrument panel and below
(10) Center instrument panel and below
(11) Right instrument panel and below
(12) Glove compartment door
(13) Knee bolster
(14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
(15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
(16) Driver side air bag compartment cover
(17) Passenger side air bag compartment cover
(18) Windshield reinforced by exterior object (specify):
(19) Other front object (specify):

LEFT SIDE
(20) Left side interior surface, excluding hardware or armrests
(21) Left side hardware or armrest
(22) Left A (A1/A2)-pillar
(23) Left B-pillar
(24) Other left pillar (specify):
(25) Left side window glass or frame
(26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(27) Other left side object (specify):
(28) Left side window sill

RIGHT SIDE
(30) Right side interior surface, excluding hardware or armrests
(31) Right side hardware or armrest
(32) Right A (A1/A2)-pillar
(33) Right B-pillar
(34) Other right pillar (specify):
(35) Right side window glass or frame
(36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(37) Other right side object (specify):
(38) Right side window sill

INTERIOR
(40) Seat, back support
(41) Belt restraint webbing/buckle
(42) Belt restraint B-pillar or door frame attachment point
(43) Other restraint system component (specify):
(44) Head restraint system
(45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
(46) Other occupants (specify):
(47) Interior loose objects
(48) Child safety seat (specify):
(49) Other interior object (specify):

ROOF
(50) Front header
(51) Rear header
(52) Roof left side rail
(53) Roof right side rail
(54) Roof or convertible top

FLOOR
(56) Floor (including toe pan)
(57) Floor or console mounted transmission lever, including console
(58) Parking brake handle
(59) Foot controls including parking brake

REAR
(60) Backlight (rear window)
(61) Backlight storage rack, door, etc.
(62) Other rear object (specify):

EXTERIOR of OCCUPANT'S VEHICLE
(65) Hood
(66) Outside hardware (e.g., outside mirror, antenna)
(67) Other exterior surface or tires (specify):
(68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE
(70) Front bumper
(71) Hood edge
(72) Other front of vehicle (specify):
(73) Hood
(74) Hood ornament
(75) Windshield, roof rail, A-pillar
(76) Side surface
(77) Side mirrors
(78) Other side protrusions (specify)
(79) Rear surface
(80) Undercarriage
(81) Tires and wheels
(82) Other exterior of other motor vehicle (specify):
(83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT
(84) Ground
(85) Other vehicle or object (specify)
(86) Unknown vehicle or object

NONCONTACT INJURY
(90) Fire in vehicle
(91) Flying glass
(92) Other noncontact injury source (specify):
(93) Air bag exhaust gases
(97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

(1) Certain
(2) Probable
(3) Possible
(9) Unknown

DIRECT/INDIRECT INJURY

(1) Direct contact injury
(2) Indirect contact injury
(3) Noncontact injury
(7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

Body Region

(1) Head
(2) Face
(3) Neck
(4) Thorax
(5) Abdomen
(6) Spine
(7) Upper Extremity
(8) Lower Extremity
(9) Unspecified

Type of Anatomic Structure

(1) Whole Area
(2) Vessels
(3) Nerves
(4) Organs (includes muscles/ ligaments)
(5) Skeletal (includes joints)
(6) Head - LOC
(9) Skin

Specific Anatomic Structure

Whole Area
(02) Skin - Abrasion
(04) Skin - Contusion
(06) Skin - Laceration
(08) Skin - Avulsion
(10) Amputation
(20) Burn
(30) Crush
(40) Degloving
(50) Injury - NFS
(90) Trauma, other than mechanical

Head - LOC
(02) Length of LOC
(04, 06, 08) Level of Consciousness
(10) Concussion

Spine
(02) Cervical
(04) Thoracic
(06) Lumbar

Vessels, Nerves, Organs, Bones, Joints are assigned consecutive two digit numbers beginning with 02

Level of Injury

Specific injuries are assigned consecutive two-digit numbers beginning with 02.

To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.

Abbreviated Injury Scale

(1) Minor injury
(2) Moderate injury
(3) Serious injury
(4) Severe injury
(5) Critical injury
(6) Maximum (untreatable)
(7) Injured, unknown severity

Aspect

(1) Right
(2) Left
(3) Bilateral
(4) Central
(5) Anterior
(6) Posterior
(7) Superior
(8) Inferior
(9) Unknown
(0) Whole region

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ ____
2. Case Number - ~~Stratum~~ 93-19
3. Vehicle Number 01
4. Occupant Number 02

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 03
   Code actual age at time of accident.
   (00) Less than one year old (specify by month): _____
   (97) 97 years and older
   (99) Unknown

6. Occupant's Sex 1
   (1) Male
   (2) Female
   (9) Unknown

7. Occupant's Height 999
   Code actual height to the nearest centimeter.
   (999) Unknown

   ___ ___ inches X 2.54 = ___ ___ ___ centimeters

8. Occupant's Weight 999
   Code actual weight to the nearest kilogram.
   (999)Unknown

   ___ ___ ___ pounds X .4536 = ___ ___ ___ kilograms

9. Occupant's Role 2
   (1) Driver
   (2) Passenger
   (9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 22

Front Seat
(11) Left side
(12) Middle
(13) Right side
(14) Other (specify): _____
(15) On or in the lap of another occupant

Second Seat
(21) Left side
(22) Middle
(23) Right side
(24) Other (specify): _____
(25) On or in the lap of another occupant

Third Seat
(31) Left side
(32) Middle
(33) Right side
(34) Other (specify): _____
(35) On or in the lap of another occupant

Fourth Seat
(41) Left side
(42) Middle
(43) Right side
(44) Other (specify): _____
(45) On or in the lap of another occupant

(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant's Posture 0
    (0) Normal posture

Abnormal posture
(1) Kneeling or standing on seat
(2) Lying on or across seat
(3) Kneeling, standing or sitting in front of seat
(4) Sitting sideways or turned to talk with another occupant or to look out a rear window
(5) Sitting on a console
(6) Lying back in a reclined seat position
(7) Bracing with feet or hands on a surface in front of seat
(8) Other abnormal posture (specify): _____
(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area 0
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium 0
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment 0
    (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
    (0) Not entrapped
    (1) Entrapped
    (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability — 3
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____
(9) Unknown

18. Manual (Active) Belt System Use — 03
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts — 1
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of manual belt system (specify): _____
(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident — 1
(0) No manual belt used
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

21. Air Bag System Availability/Function — 0
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify): _____
(3) Air bag not reinstalled
(9) Unknown

22. Air Bag System Deployment — 0
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

23. Are There Indications of Air Bag System Failure? — 0
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use — 3
(0) None used
(1) Police did not indicate restraint use
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt used, type not specified
(6) Child safety seat
(7) Other or automatic restraint (specify): _____
(8) Restrained, type unknown
(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position: 0
    (0) No head restraints
    (1) Integral—no damage
    (2) Integral—damaged during accident
    (3) Adjustable—no damage
    (4) Adjustable—damaged during accident
    (5) Add-on—no damage
    (6) Add-on—damaged during accident
    (8) Other (specify): _____
    (9) Unknown

26. Seat Type (this Occupant Position): 03
    (00) Occupant not seated or no seat
    (01) Bucket
    (02) Bucket with folding back
    (03) Bench
    (04) Bench with separate back cushions
    (05) Bench with folding back(s)
    (06) Split bench with separate back cushions
    (07) Split bench with folding back(s)
    (08) Pedestal (i.e., column supported)
    (09) Other seat type (specify): _____
    (10) Box mounted seat (i.e., van type)
    (99) Unknown

27. Seat Performance (this Occupant Position): 1
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion (specify): _____
    (7) Combination of above (specify): _____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 998
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify):
_____
(998) Unknown make/model
(999) Unknown if child safety seat used

29. Type of Child Safety Seat 4
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat
(7) Other type child safety seat (specify):
_____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

30. Child Safety Seat Orientation 02
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify):
_____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify):
_____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify):
_____
(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 03

32. Child Safety Seat Shield Usage 03

33. Child Safety Seat Tether Usage 03

Note: Options below applicable to Variables OA31-OA33.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

34. Injury Severity (Police Rating) 5

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

35. Treatment - Mortality 0
(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):

_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(8) Treatment - other (specify):

_____

(9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 0
(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):

_____

(9) Unknown

37. Hospital Stay 00
(00) Not Hospitalized
____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

38. Working Days Lost 97
____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7

VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER

39. Time to Death 00
____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

40. 1st Medically Reported Cause of Death 00

41. 2nd Medically Reported Cause of Death 00

42. 3rd Medically Reported Cause of Death 00
____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(97) Other result (includes fatal ruled disease) (specify):

_____

(99) Unknown

43. Number of Recorded Injuries for This Occupant 00
____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

AUTOMATIC BELT SYSTEM

44. Automatic (Passive) Belt System Availability/ Function [0]
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

45. Automatic (Passive) Belt System Use [0]
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):

(3) Automatic belt use unknown
(9) Unknown

46. Automatic (Passive) Belt System Type [0]
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

47. Proper Use of Automatic (Passive Belt System [0]
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident [0]
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

49. Seat Orientation (this Occupant Position) [0]
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):

(9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA

50. Glasgow Coma Scale (GCS) Score (at Medical Facility) [00]
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

51. Was the Occupant Given Blood? [1]
(1) No - blood not given
(2) Yes - blood given (specify units):
(9) Unknown if blood given

52. Arterial Blood Gases (ABG) – HCO_3 [00]
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION? NO [ ] YES [ ]

UPDATE CANDIDATE? NO [ ] YES [ ]

U.S. Department of Transportation

National Highway Traffic Safety Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~		3. Vehicle Number	01
2. Case Number - ~~Stratum~~	9319	4. Occupant Number	02

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	O.I.C.-A.I.S Body Region	O.I.C.-A.I.S Type of Anatomic Structure	O.I.C.-A.I.S Specific Anatomic Structure	O.I.C.-A.I.S Level of Injury	O.I.C.-A.I.S A.I.S. Severity	O.I.C.-A.I.S Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
1st	5. 0	6. 0	7. 0	8. 00	9. 00	10. 0	11. 0	12. 00	13. 0	14. 0	15. 00
2nd	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.
3rd	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.
4th	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.
5th	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.
6th	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.
7th	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.
8th	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.
9th	93.	94.	95.	96.	97.	98.	99.	100.	101.	102.	103.
10th	104.	105.	106.	107.	108.	109.	110.	111.	112.	113.	114.

HS Form 433B (1/93)

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.