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of Transportation

**National Highway  
Traffic Safety  
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400 Seventh Street, S.W.  
Washington, D.C. 20590

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**TRANSPORTATION SCIENCES CENTER  
ACCIDENT RESEARCH GROUP**

Division of Calspan Corporation  
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**CALSPAN REMOTE AIR BAG DEPLOYMENT INVESTIGATION**

**CALSPAN CASE NO. 93-25**

**VEHICLE: 1992 CHRYSLER LeBARON CONVERTIBLE**

**LOCATION: [REDACTED], MD**

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

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

# TECHNICAL REPORT STANDARD TITLE PAGE

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15. Supplementary Notes Remote investigation of an air bag deployment crash that resulted in minor severity injuries to the belted female driver.			
16. Abstract <p>This remote investigation focused on an intersection collision that involved two similar Chrysler LeBarons. The striking vehicle was a 1992 LeBaron convertible, driven by a 50 year old female. She attempted to pass through a major four-leg intersection on a red signal phase and struck the right side of the other LeBaron. Resultant directions of force were probably within the 11 o'clock sector for the striking LeBaron and 2 o'clock for the other LeBaron. The LeBaron convertible sustained minor left frontal damage that involved displacement of the bumper and left front fender. The driver reported that the headlamp and hood of the vehicle were not damaged. As a result of the crash, the LeBaron convertible's driver's side air bag Supplemental Restraint System (SRS) deployed.</p> <p>The female driver of the LeBaron convertible was wearing the manual 3-point lap and shoulder belt system. Immediately prior to the crash, she braced against the steering wheel with both hands at the 3 and 9 o'clock positions. The deployed air bag, her loading of the manual restraint system, and her bracing action against the steering wheel resulted in minor severity (AIS-1) injuries. The driver of the struck LeBaron and his child occupants were not injured.</p>			
17. Key Words Supplemental Restraint System (SRS) Left frontal impact Sufficient longitudinal deceleration Air bag deployment		18. Distribution Statement General Public	
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**CALSPAN REMOTE AIR BAG DEPLOYMENT INVESTIGATION**  
**CALSPAN CASE NO. 93-25**  
**VEHICLE: 1992 CHRYSLER LeBARON CONVERTIBLE**  
**LOCATION: [REDACTED], MD**

**SUMMARY**

This remote investigation focused on an intersection-type collision which involved two similar Chrysler LeBarons that were equipped with supplemental driver's side air bag systems. The striking vehicle was a 1992 LeBaron convertible that sustained minor frontal damage and as a result of the crash, the driver's side air bag system deployed. The belted female driver sustained minor severity injuries from loading the manual belt system, bracing against the steering wheel, and from her involvement with the deploying air bag. The struck LeBaron sustained minor damage to the right rear quarter panel. Its air bag system did not deploy.

The crash occurred at a major four-leg intersection in [REDACTED], MD, on [REDACTED] 1993, during daylight hours. Traffic flow through the intersection was controlled by an overhead signal system. The driver of the LeBaron convertible stated that she was traveling in an easterly direction in the curb lane of a six-lane divided roadway as she approached the intersection on a green signal phase. She proceeded toward the intersection, however, the signal changed to a yellow phase. The driver stated that she checked for traffic within the intersection and entered on the yellow phase in an attempt pass straight through. The signal phase for east/westbound traffic probably turned red as the driver of the convertible entered the intersection. The driver of the other Chrysler LeBaron was traveling in a southerly direction on the intersecting roadway and accelerated into the intersection as the signal turned green for north/southbound traffic. The driver of the LeBaron convertible detected the other vehicle enter her path of travel and braked in an attempt to avoid impact. It was unknown if the driver of the other LeBaron initiated avoidance action.

The left front bumper area of the LeBaron convertible impacted the right rear quarter panel area of the other vehicle. Resultant directions of force were probably within the 11 o'clock sector for the convertible and within the 2 o'clock sector for the struck vehicle. The LeBaron convertible sustained minor damage to the left front area. The driver stated that the bumper was displaced rearward and the left front fender was against the left front tire. There was no damage to the left headlamp or hood of the vehicle. As a result of the impact, the convertible underwent a sufficient longitudinal deceleration which deployed the driver's side air bag system. The struck LeBaron sustained minor damage to the right rear quarter panel. The driver of the LeBaron convertible stated that her vehicle came to rest beyond the point of impact near the southeast quadrant of the intersection. At rest, the engine remained running and the driver's foot was resting on the brake pedal. The other LeBaron came to rest near the point of impact and remained in the southbound travel lanes.

The driver of the LeBaron convertible was a 51 year old female with a height of 168.9 cm (66.5") and weight of 66 kg (147 lbs.). She stated that she was properly wearing the 3-point manual lap and shoulder belt system. The driver was dressed in a skirted suit with the jacket buttoned from the neckline to the skirt. In addition, she was wearing an open jacket over the suit. The driver further stated that she was wearing a multi-strand necklace with matching earrings, a watch on her left wrist, and bi-focal eyeglasses with soft-contact lenses. Her seat was adjusted to a mid track position and immediately prior to impact, she braced with both hands against the steering wheel at the 3 and 9 o'clock positions.

As a result of the frontal impact, the supplemental driver's side air bag deployed. The deploying air bag expanded against the anterior aspect of the driver's forearms which resulted in single scratch abrasions over the anterior and lateral aspects of the driver's wrists. (The single scratch abrasions possibly resulted from rotation of the watch and bracelet on the wrists.) The air bag subsequently contacted the driver's upper chest and facial areas as she initiated a forward trajectory in response to the impact force. The driver stated that her prescription eyeglasses were displaced from her face and that two strands of her necklace were damaged. As she moved forward, her thoracic and pelvic areas loaded the manual belt system which produced pain under her right breast. In addition, the driver experienced hematuria which she related to a possible bladder or kidney contusion. The loading force from her forward trajectory was transmitted into her arms as she attempted to brace against the steering wheel. She reported that her right wrist buckled which strained the tendons in the wrist area. The right hand then separated from the steering wheel. The air bag contact to the right wrist/forearm area, in combination with the bracing action against the steering wheel, produced a subcutaneous hematoma of the anterior forearm, proximal to the wrist.

Immediately following the crash, the driver of the Chrysler LeBaron noted a smoke or dust-like substance within the vehicle. At this point, she was unaware that the supplemental driver's side air bag system had deployed. She reached for her cellular car telephone and called 911 to report the accident. The engine remained running as she maintained a braking force on the foot pedal. The driver placed the console mounted transmission selector lever in the park position and exited the vehicle from the left door. As the driver exited the vehicle, she noted the deployed air bag in its deflated state. The driver broke down with emotion and began to cry and hyperventilate.

A local police officer responded to the 911 call and arrived on-scene within minutes of the crash. He requested an ambulance to transport the driver of the LeBaron convertible to a local hospital. The driver stated that she continued to hyperventilate at the hospital for approximately one hour which lowered her body temperature to 95 degrees and elevated her blood pressure to 125/85. She was examined by a physician who ordered an X-ray of the right wrist. The X-rays were negative and the driver was released following treatment. The driver is a physician and diagnosed her own injuries, inclusive of the hematuria which did not surface until later in the day.

Although the Chrysler LeBaron sustained minor damage, the vehicle was towed from the scene due to the transport of the driver to a local hospital. The struck LeBaron sustained minor damage and was driven from the scene. The driver and his child occupants were not injured.

**ATTACHMENT A**  
**NASS Occupant Forms**



# OCCUPANT ASSESSMENT FORM

## OCCUPANT'S SEATING

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

4. Occupant Number

## OCCUPANT'S CHARACTERISTICS

5. Occupant's Age

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) Male

(2) Female

(9) Unknown

7. Occupant's Height

Code actual height to the nearest  
centimeter.

(999) Unknown

67 inches X 2.54 = 169 centimeters

8. Occupant's Weight

Code actual weight to the nearest  
kilogram.

(999) Unknown

147 pounds X .4536 = 066 kilograms

9. Occupant's Role

(1) Driver

(2) Passenger

(9) Unknown

10. Occupant's Seat Position

*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) 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 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 04

- (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 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 —

- (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 Position3

- (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 (specify): \_\_\_\_\_
- (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 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 02

- \_\_\_\_\_ 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 CENTER39. 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 0041. 2nd Medically Reported Cause of Death 0042. 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  
(96) Mode of death given but specific  
injuries are not linked to cause  
of death. (specify):  
\_\_\_\_\_

- (97) Other result (includes fatal ruled  
disease) (specify):  
\_\_\_\_\_

(99) Unknown

43. Number of Recorded Injuries for  
This Occupant 04

- \_\_\_\_\_ 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

**Check the Primary Source Used In Determining Belt Use.**

- [ ] Not equipped/not available/destroyed or rendered inoperative  
 [ ] Vehicle inspection  
 [ ] Official injury data  
 [✓] Driver/occupant interview  
 [ ] Other (specify):

[ ] Unknown if belt used

**ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION?**

NO [ ] YES [ ]

**UPDATE CANDIDATE?**

NO [ ] YES [ ]

**STOP - VARIABLES 50 THROUGH 53 ARE  
COMPLETED BY THE ZONE CENTER****TRAUMA DATA**

50. Glasgow Coma Scale (GCS) Score 15  
(at Medical Facility)  
(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) -  $\text{HCO}_3$  01  
(00) Not injured  
(01) Injured, ABGs not measured or reported  
(02-50) Code the actual value of the  $\text{HCO}_3$   
(96) ABGs reported,  $\text{HCO}_3$  unknown  
(97) Injured, details unknown  
(99) Unknown if injured

**BELT USE DETERMINATION**

53. Primary Source of Belt Use Determination 3  
(0) Not equipped/not available/destroyed  
or rendered inoperative  
(1) Vehicle inspection  
(2) Official injury data  
(3) Driver/occupant interview  
(8) Other (specify): \_\_\_\_\_  
(9) Unknown if belt used



## OCCUPANT INJURY FORM

1. <del>Primary Sampling Unit Number</del>	3. Vehicle Number <u>01</u>
2. Case Number - <del>Stratum</del> <u>93-25</u>	4. Occupant Number <u>01</u>

### 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	Body Region	A.I.S. - 90				Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number	
			Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity					
1st	5. <u>7</u>	6. <u>7</u>	7. <u>9</u>	8. <u>04</u>	9. <u>02</u>	10. <u>1</u>	11. <u>1</u>	12. <u>45/04</u>	13. <u>2</u>	14. <u>2</u>	15. <u>00</u>
2nd	16. <u>7</u>	17. <u>7</u>	18. <u>9</u>	19. <u>02</u>	20. <u>02</u>	21. <u>1</u>	22. <u>1</u>	23. <u>45</u>	24. <u>1</u>	25. <u>2</u>	26. <u>00</u>
3rd	27. <u>7</u>	28. <u>7</u>	29. <u>9</u>	30. <u>02</u>	31. <u>02</u>	32. <u>1</u>	33. <u>2</u>	34. <u>45</u>	35. <u>1</u>	36. <u>2</u>	37. <u>00</u>
4th	38. <u>7</u>	39. <u>7</u>	40. <u>5</u>	41. <u>14</u>	42. <u>20</u>	43. <u>1</u>	44. <u>1</u>	45. <u>04</u>	46. <u>1</u>	47. <u>2</u>	48. <u>00</u>
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. ____



AGE 50  
SEX FEMALE  
WT. 66 kgs  
HT. 169 cm

Pain under right breast

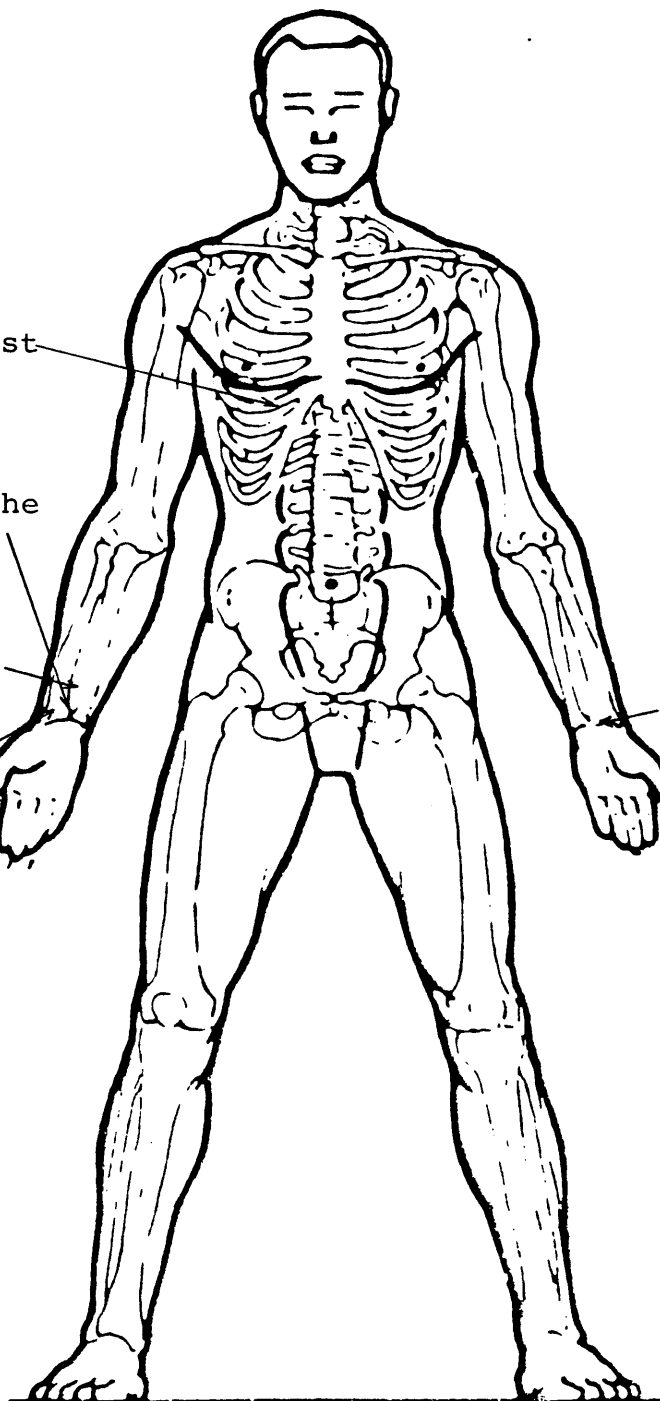
Strained tendons in the  
right wrist (AIS-1),  
bracing against wheel

Subcutaneous hematoma  
of the right anterior  
forearm, (AIS-1),  
air bag/bracing

Diagonally orientated  
abrasion over right  
anterior wrist (AIS-1),  
air bag/bracelet

Possible bladder or  
kidney contusion  
(hematuria)

Single scratch abrasion  
over left anterior  
wrist (AIS-1), air bag/  
watch



**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