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

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

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Thank you for choosing crash data from the National Highway Traffic Safety Administration (NHTSA) for your research or other use. The information contained in this motor vehicle crash report is collected, maintained and distributed in accordance with Public Law 89-564. In accordance with this Public Law, NHTSA is required not to release any case information until completion of quality control procedures. These procedures include a review of the case material to extract all names, licenses and registration numbers, non-coded interview material, non-research related researcher comments in the margins, non-factual data, and the production number portion of the vehicle identification number (VIN).

If you requested NHTSA to query its database files in order to identify a specific crash, then that query was made using non-personal descriptors you provided for use in our search. This motor vehicle crash may have been identified from a data search and matches the general, non-personal descriptors you provided, but we cannot confirm that this is the specific crash report you requested.

If you have any questions with regard to the above procedures, please contact the Field Operations Branch, Crash Investigation Division, National Center for Statistics and Analysis at 202-366-4820. Again, please be advised that we cannot confirm that this is the case that you have specifically requested nor can we certify the information to be correct.

*** *** ***

ZIMMERMAN [redacted] 1994

TRANSPORTATION SCIENCES CENTER
ACCIDENT RESEARCH GROUP

Division of Calspan Corporation
[redacted]

CALSPAN REMOTE INADVERTENT AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 93-17

VEHICLE: 1991 VOLVO 240, 4DR. SEDAN

LOCATION: [redacted], MD

INCIDENT 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 alleged inadvertent deployment of a driver's side air bag in a 1991 Volvo 240, 4dr. sedan.		

16. *Abstract*

This remote investigation focused on a driver's complaint to NHTSA of an alleged inadvertent deployment of the driver's side air bag system in her parked 1991 Volvo 240, 4dr. sedan. The driver parked the vehicle at curbside in the morning and returned to the Volvo at the end of her work shift. As she entered the vehicle, the driver placed the key in the ignition and turned the switch to the on-position which illuminated the indicator lights, however, she did not start the engine. The driver subsequently reached with her right hand for the manual belt system as the air bag deployed.

The air bag contacted the torso, right arm, face and head of the driver which resulted in multiple soft tissue injuries. In addition, the driver sustained a inner ear injury with trauma to the tympanic membrane. The driver was transported by ambulance to a local hospital where she was treated for her injuries and released.

17. *Key Words* Supplemental Restraint System (SRS) Inadvertent deployment	18. *Distribution Statement* General Public		
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CALSPAN REMOTE INADVERTENT AIR BAG DEPLOYMENT INVESTIGATION
CALSPAN CASE NO. 93-17
VEHICLE: 1991 VOLVO 240
LOCATION: [redacted], MD

SUMMARY

This remote investigation focused on an owner's complaint to the National Highway Traffic Safety Administration (NHTSA) of an alleged inadvertent deployment of the driver's side air bag system in a 1991 Volvo 240, 4 dr. sedan. The owner purchased the Volvo new at the end of the model year in [redacted] 1991, and was the principal driver of the vehicle. In addition to the standard factory installed features that included air conditioning, power windows, a central power locking system, Supplemental Restraint System (SRS) and leather seats, the owner had the dealer install an alarm system. The SRS consisted of the driver's side air bag system. The vehicle identification number for the Volvo was unknown, however, the owner stated that the odometer reading at the time of the incident was approximately 18,518 km/h (11,500 miles).

The owner reported that during her ownership of the vehicle, she had returned the Volvo 240 to the dealership on several occasions for service. She stated that the dealer installed alarm system frequently activated without disturbance to the vehicle. The owner also complained that she was unable to manually turn off the alarm system and that it was always it the active mode. The owner noted that the Volvo was not prewired at the factory for the alarm system. In addition to the alarm problems, the owner further reported that the service engine indicator lamp was illuminated for approximately one year prior to the alleged inadvertent deployment. During the winter of 92/93, the owner stated that the SRS indicator lamp continued to glow after the vehicle was started. She returned the vehicle to the dealership where they tested the diagnostics and informed her that the system was fully operational. Following this incident, the SRS indicator lamp functioned properly during the start-up procedure.

The alleged inadvertent deployment occurred on [redacted] 1993, during daytime hours in [redacted] MD. During the morning, the owner stated that she drove the vehicle from her residence to her work place and parked the Volvo at curbside on a local street. All the windows were fully closed as she exited the vehicle and activated the power locking system. The owner walked to her office and returned at the end of the day, following her normal work shift. She stated that the weather was clear, but hazy and that the temperature was very hot (upper 90's, F) with high humidity. As she approached her vehicle, she thought the heat that had developed on the inside of the vehicle throughout the day would have softened the leather on the seats and steering wheel. She unlocked the driver's door and opened the window for a few moments prior to entering the vehicle. As she entered the Volvo, the owner stated that she placed the ignition key in the switch and turned it to the on-position, as she noted the indicator lamps illuminate, but did not start the engine. She

immediately began to reach with her left hand for the manual 3-point lap and shoulder belt system as the SRS deployed.

The owner/driver of the Volvo was a 50 year old female with a height of 157 cm (62") and weight of 81 kg (180 lbs.) She stated that the vehicle was equipped with a fixed (non-tilting) steering column and that the driver's seat was adjusted to the full rearward track position with the seatback set nearly vertical. At the time of the incident, she recalled that she was leaning slightly forward with her torso rotated in a counterclockwise direction as she was reaching for the manual belt system with her left arm. As the air bag deployed, the driver stated that she heard a tremendous explosion and felt something impact her head. She claimed to have momentarily lost consciousness. As she regained consciousness, the driver found herself slumped forward with the deployed air bag deflated and extended over her head. The driver began to gasp for her breath due to the fumes from the deployed bag. She initially thought the vehicle was on fire and opened the driver's side door and crawled from the vehicle onto the street.

Several passers-by stopped to offer assistance to the driver. The driver, who is a health care professional, determined that she was injured and requested an ambulance for transport to a local hospital. The driver sustained multiple injuries from her involvement with the deployed SRS. The lower quadrant of the air bag contacted her abdominal area which resulted in a contusion of the anterior abdomen, at the waistline. Her right upper anterior chest, right breast and right upper arm were contused from contact with the air bag. The bag subsequently contacted her face and head as her head was rotated in a counterclockwise direction. As a result of the contact, the driver sustained abrasions over the anterior chin and right cheek, and a laceration of the lower lip from compression of the lip against a tooth. The bag abraded the auricle of the right ear and separated a screw-back earring from the ear. The earring lacerated the lobe of the ear. In addition to the soft tissue injuries that resulted from direct contact with the air bag, the driver also sustained a middle right ear injury with trauma to the tympanic membrane. The driver stated that she was wearing plastic framed eyeglasses that were knocked off her face by the deploying air bag. There was no damage to the eyeware. She was transported to a local hospital where she was treated for her injuries and released. The emergency room physician who treated the driver related to her that her large weight probably prevented her from crushing type injuries of the chest.

The driver stated that immediately following the inadvertent air bag deployment, she detected a ringing sensation in her right ear. In addition, the trauma to the inner ear had resulted in amplified hearing in the ear and extreme sensitivity to noise. Due to the ear trauma, the driver stated that she tries to avoid areas involving loud noises. At night, she sleeps on the right ear to reduce sound levels around her environment. She was examined by an ear specialist who was not able to provide treatment for the injury. It should be noted that the driver was reinterviewed on [redacted], 1994, for long term follow-up on the hearing impairment. She stated that the amplified hearing has persisted since the accident and that she is becoming accustomed to it. The driver further relayed that she has not revisited the specialist since her initial evaluation. The physician told the driver that the impairment would probably diminish over time, however, she does not believe it will.

A member of the driver's family notified the Volvo dealership on the following day of the alleged inadvertent deployment. The dealership representative denied the possibility of an inadvertent deployment and arranged to have the Volvo towed to the dealer that day. The service department advised the owner that the vehicle would be repaired promptly providing she authorizes the repair. The driver requested that someone from Volvo should inspect the vehicle to determine the cause of the inadvertent deployment and to make the necessary repair to prevent this from recurring to her Volvo, or to someone else. The owner stated that the communication with the dealer and Volvo began to deteriorate. Within several days of the inadvertent deployment, a representative from Volvo Cars of North America called to inquire if the driver was initiating legal action against Volvo. She informed that person that she was in contact with her attorney, however, did not seek legal action. The dealership subsequently called the owner to inform her that the Volvo 240 would be repaired under warranty. She asked if the air bag system could be defeated since she was fearful of another inadvertent deployment. The dealer advised her that disconnecting the SRS was not permissible by law. The owner stated that the primary reason why she purchased the vehicle was the safety record of the Volvo and that she no longer felt safe with an air bag.

The driver finally had the Volvo removed from the dealership as she continued to pursue the inadvertent deployment issue. She noted during our interview that she became aware of several other inadvertent deployments involving Volvo automobiles. The owner stated that after a considerable length of time, the dealership notified her and offered her a "deal that she couldn't refuse", to trade her 1991 Volvo 240 on a new 1993 Volvo 940. She accepted the offer and traded the 240 sedan without the necessary repair to the SRS.

ATTACHMENT A

NASS Occupant Forms

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~~ 93-17
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 50
   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 157
   Code actual height to the nearest centimeter.
   (999) Unknown

   62 inches X 2.54 = ___ centimeters

8. Occupant's Weight 081
   Code actual weight to the nearest kilogram.
   (999)Unknown

   180 pounds X .4536 = ___ 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): TURNED CCW, REACHING FOR SEAT BELT
    (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 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 2
(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? 9
(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"

NO POLICE INVOLVEMENT

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position: 1
    (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) —

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury NO PAR
(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 99
_____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
(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 09
_____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 (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 theHCO_3
    (96) ABGs reported , 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

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~~ ____
2. Case Number - ~~Stratum~~ 93-17
3. Vehicle Number 01
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	A.I.S. - 90 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
			(MSCI-1)								
1st	5. 7	6. 5	7. 9	8. 04	9. 02	10. 1	11. 7	12. 45	13. 1	14. 1	15. 00
			(CRCI-1)								
2nd	16. 7	17. 4	18. 9	19. 04	20. 02	21. 1	22. 1	23. 45	24. 1	25. 1	26. 00
			(ARCI-1)								
3rd	27. 7	28. 7	29. 9	30. 04	31. 02	32. 1	33. 1	34. 45	35. 1	36. 1	37. 00
			(FIAI-1)								
4th	38. 7	39. 2	40. 9	41. 02	42. 02	43. 1	44. 8	45. 45	46. 1	47. 1	48. 00
			(FRAI-1)								
5th	49. 7	50. 2	51. 9	52. 02	53. 02	54. 1	55. 1	56. 45	57. 1	58. 1	59. 00
			(FILI-1)								
6th	60. 7	61. 2	62. 9	63. 06	64. 02	65. 1	66. 8	67. 45	68. 1	69. 2	70. 00
			(HRAE-1)								
7th	71. 7	72. 2	73. 9	74. 02	75. 02	76. 1	77. 1	78. 45	79. 1	80. 1	81. 00
			(HRLE-1)								
8th	82. 7	83. 2	84. 9	85. 06	86. 02	87. 1	88. 1	89. 45	90. 1	91. 1	92. 00
			(HROE-1)								
9th	93. 7	94. 2	95. 4	96. 02	97. 08	98. 1	99. 1	100. 45	101. 1	102. 2	103. 00
10th	104. __	105. __	106. __	107. __	108. __	109. __	110. __	111. __	112. __	113. __	114. __

AIS-88 codes in ( )

HS Form 433B (1/94)

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.

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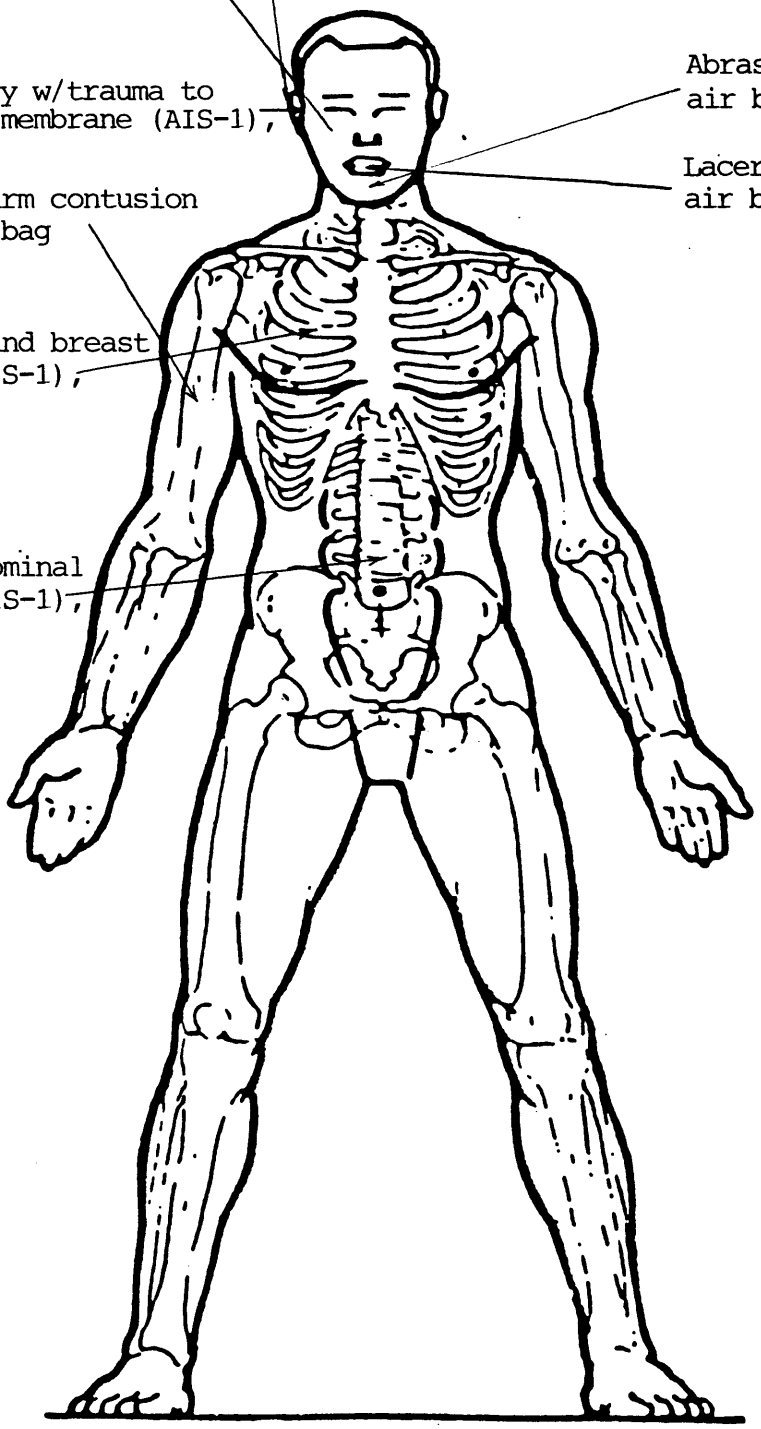
AGE 50
SEX FEMALE
WT. 81 kgs
HT. 157 cm



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