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

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Dear Crash Data Researchers/Users:

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.

*** *** ***

TRANSPORTATION RESEARCH CENTER

Indiana University
Bloomington, Indiana 47403-1599

REMOTE AIR BAG REPORT

CASE NO. - 93-13
FLEET - PRIVATE VEHICLE
LOCATION - [redacted]
ACCIDENT DATE - [redacted] 1993

Submitted By:

[redacted]
Associate Scientist

[redacted]

Revised Submission:

[redacted]

Contract Number: DTNH22-94-A-07048

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590

DISCLAIMERS

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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 be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the precrash, 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.

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
TRC/IU Case No. 93-13		

4. Title and Subtitle	5. Report Date
Remote Air Bag Investigation Private Vehicle Location - [redacted]	[redacted]4
	6. Performing Organization Code
7. Author(s) [redacted]	8. Performing Organization Report No. TRC/IU 93-13, Task 0202
9. Performing Organization Name and Address Indiana University Transportation Research Center [redacted]	10. Work Unit No. (TRAIS)
	11. Contract or Grant No. DTNH22-94-A-07048
	13. Type of Report and Period Covered [redacted] 1993
12. Sponsoring Agency Name and Address U.S. Department of Transportation (NRD-32) National Highway Traffic Safety Administration National Center for Statistics and Analysis Washington, D.C. 20590	14. Sponsoring Agency Code

15. Supplementary Notes

Remote air bag investigation involving a 1991 Ford Crown Victoria, 4-door sedan

16. Abstract

This report covers a remote investigation of an air bag deployment crash that involved a 1991 Ford Crown Victoria, 4-door sedan that lost control and impacted a ditch embankment. The Crown Victoria was traveling north, on a bridge, in the northbound lane of a two-lane, undivided, gravel, county roadway. The case vehicle impacted the ditch embankment causing the driver side supplemental restraint (air bag) to deploy. The driver of the vehicle (60 year-old female) was also wearing the available, active, three-point, lap and shoulder belt. According to the driver and her medical records, she sustained abrasions and contusions to her left eye (AIS-1) and a tear to her left iris sphincter (AIS-1). Subsequently, she developed a traumatic cataract that necessitated the cataract's extraction and a lens implantation. According to the Police Accident Report, the driver of the case vehicle was listed as restrained and sustained a "B" (nonincapacitating-evident) injury.

17. Key Words	18. Distribution Statement
Motor Vehicle Traffic Accident Air Bag Deployment Injury Severity	General Public

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	37	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

* U. S. GOVERNMENT PRINTING OFFICE : 1973 725-504/328

TABLE OF CONTENTS

TRC/IU REMOTE AIR BAG REPORT

TRC/IU CASE NO. 93-13

FLEET - PRIVATE VEHICLE -
LOCATION [redacted]A

Summary

This report concerns a motor vehicle crash involving an air bag equipped 1991 Ford Crown Victoria 4-door sedan and an embankment occurring on [redacted], 1993 at [redacted], near [redacted] on a county road.

The Crown Victoria was traveling north in the northbound lane of a two-lane, undivided roadway when the driver's vehicle went out-of-control on the snow-and-ice covered bridge in the gravel roadway. The Crown Victoria rotated counterclockwise, departed the west edge of the road, slid down into a ditch, and impacted an embankment on the opposite side of the ditch; after impact the Ford continued to rotate counterclockwise and came to rest heading south in the ditch.

According to the driver, the front right of the Crown Victoria impacted the opposite embankment of the ditch. With no available vehicle photographs, the CDC is not estimable. No reconstruction program was used on this crash.

The 1991 Ford Crown Victoria was equipped with a driver supplemental restraint system (air bag) which deployed as a result of the frontal impact. The driver of the vehicle (60 year-old female) was also restrained by the active, three-point, lap and shoulder belt. She sustained abrasions and contusions to her left eye (AIS-1) and a tear to her left iris sphincter (AIS-1). Subsequently, she developed a traumatic cataract that necessitated the cataract's extraction and a lens implantation. The driver of the Crown Victoria was listed on the Police Accident Report as sustaining a "B" (nonincapacitating-evident) injury as a result of the crash.

TRC/IU REMOTE AIR BAG REPORT

FLEET - PRIVATE VEHICLE
LOCATION - [redacted]
CASE NO. - 93-13

ACCIDENT DATA

Location/Street:	County Road
City/Township:	[redacted] county, near [redacted]
Area/Type:	Rural, agricultural
Accident Date/Time:	[redacted] 1993 @ [redacted] p.m.
Investigating Police Agency:	[redacted] County Sheriff Department
Accident Type:	Car - ran-off-road
Occupant Injury Severity (air bag vehicle):	Left eye, iris laceration (AIS-1)

AMBIENT CONDITIONS

Light conditions:	Daylight
Weather Condition:	Overcast, approximately 15 degrees F
Precipitation:	Snowing
Road Surface:	Packed snow and ice with fresh snow

ROADWAY

	Case Vehicle
Location:	County road
Number of Travel Lanes:	2-lanes, undivided
Surface Type:	Gravel roadway, on a bridge
Vertical alignment:	Negative grade to north
Horizontal alignment:	Straight
Traffic Density:	Light
Speed Limit:	80 k.p.h. (50 m.p.h.)
Traffic Controls:	None

VEHICLES

	Case Vehicle
Year:	1991
Make:	Ford
Model:	Crown Victoria
Body Type:	4-door sedan
V.I.N.:	2FACP74F4MX------
Mileage:	Unknown
Securiflex windshield:	Unknown
Windshield damage/source:	None
Fleet:	Private vehicle
Tow status:	Towed due to damage
Reported Defects:	None

VEHICLE DAMAGE

	Case Vehicle
Deployment Impact	
Object Struck:	Ditch embankment
Event number:	1
Damage location:	Front right
CDC:	Unknown
Estimated Maximum Crush:	Unknown
Damage components:	Grille, engine, front suspension and bumper, frame, right front headlight assembly, right fender
Repair Estimate:	$7,000 to $10,000
Interior damage:	Air bag cover flap and module

COLLISION SEQUENCE

According to the case vehicle driver and the police accident report, the case vehicle was traveling north on a bridge in the northbound lane of a two-lane, undivided, gravel, county roadway, at a driver estimated speed of no more than 64 k.p.h. (40 m.p.h.), when the case vehicle went out-of-control on the snow-and-ice covered bridge. The case vehicle rotated counterclockwise, departed the west edge of the road, slid down into a ditch, and impacted an embankment on the opposite side of the ditch.

According to the case vehicle driver, the front right of the case vehicle impacted the opposite embankment of the ditch. According to the case vehicle driver and the police accident report, after the impact the case vehicle continued to rotate counterclockwise and came to rest heading south in the ditch.

According to the police accident report, the driver of the case vehicle, and the driver's medical records, the case vehicle was equipped with a driver supplemental restraint system (air bag) which deployed as a result of the frontal impact with the embankment. The police accident report, the driver of the case vehicle, and the driver's medical records all indicate that the driver was also restrained by the active, three-point, lap and shoulder belt. The case vehicle driver indicates that she sustained a left eye injury and contusions to her right thumb and left ankle. Her medical records indicate that she sustained abrasions and contusions to her left eye and a tear to her left iris sphincter. Subsequently, she developed a traumatic cataract that necessitated the cataract's extraction and a lens implantation.

DRIVER DATA

	Case Vehicle
Age:	60
Sex:	Female
Height:	175 centimeters (69 inches)
Weight:	91 kilograms (200 pounds)
Occupation:	Retired
Active Restraint System/Usage:	3-point lap and shoulder belt
Usage Source:	Driver and police accident report
Eye glasses/contacts:	None
Vehicle Familiarity:	Approximately two years
Route Familiarity:	Daily
Trip Plan:	Returning home from errand

DRIVER DATA (CONT'D.)

Case Vehicle

Manner of Leaving Scene:	Neighbor transported driver home; husband took driver to private physician later
Type of Medical Treatment:	Private physician at office

DRIVER INJURIES

Injury	Severity (AIS)	Source
Abrasion left cornea	240602.1,2	Air bag
Hyphema (contusion) left eye	240604.1,2	Air bag
Laceration left iris	240800.1,2	Air bag
Vitreous injury (hemorrhage)	241699.1,2	Air bag
Contusion, periorbital, left eye	297402.1,2	Air bag
Abrasions, left eyelid	297202.1,2	Air bag
Hemorrhage, subconjunctiva	240416.1,2	Air bag
Contusion right thumb	790402.1,1	Air bag
Contusion left ankle	890402.1,2	Foot controls

DISCUSSION

This case was initiated for investigation because of the very serious consequences that developed from an otherwise minor air bag injury. A brief case history of the injuries sustained by the case vehicle driver appeared in the [redacted] Medical Journal (see **Appendix G**). The following narrative presents a review of the crash and a detailed discussion of the case vehicle driver's medical history spanning eleven months from the crash date to the eventual resolution of the medical problems.

The case vehicle driver is: female, 60 years-old, 175 cm (69 in), and 91 kg (200 lbs). She was the sole occupant of a 1991 Ford Crown Victoria, four-door sedan, equipped with a driver side supplemental restraint system (air bag) and an active, three-point, lap and shoulder belt. According to the case vehicle driver, the case vehicle went out-of-control in a snow-and-ice covered bridge on a gravel, county road. According to the case vehicle driver and the police accident report, the case vehicle rotated counterclockwise and departed the left side of the road, slid down into a ditch, and impacted the opposite ditch embankment causing the air bag to deploy. The case vehicle driver estimates her pre-crash travel speed at 64 k.p.h. (40 m.p.h.). In addition, the driver indicates that she never applied her brakes at any time during the collision sequence and estimates that her car was still moving at about 64 k.p.h. (40 m.p.h.) when the impact occurred.

According to the case vehicle driver, her car was equipped with a bench seat and an adjustable (tilt) steering wheel. She indicates that her seat was adjusted to the fully rearward position and the tilt steering wheel was angled slightly upward. The case vehicle driver volunteered that she is a large per-

DISCUSSION (CONT'D.)

son, and these adjustments were arranged for her ease of entry and exit. The case vehicle driver also indicates that she was holding the steering wheel with two hands, with her feet on the floor and foot controls. She was restrained with the lap portion across her stomach and the torso portion over her shoulder. She indicates that she was seated in a normal driving posture, with her back against the seat back and her head upright and facing forward. The case vehicle driver further indicates that there were no loose objects in the car, and she was not wearing any glasses or contact lens at the time of the crash.

Based upon the case vehicle driver's account, the air bag deployed in the normal manner. The subject was not able to recall whether she went full-face into the air bag. Based on her description of the events, the direction of principal force was probably in the one to two o'clock region. The case vehicle driver indicates that no glass was broken and that no intrusions occurred into the occupant compartment.

The case vehicle driver indicates that after the crash she exited her car through the driver's door and was standing next to her car when a neighbor came upon the scene and drove her to her home, a short distance away. Her husband took her immediately to their family physician, who identified a hyphema in her left eye. She went immediately from her family physician to an eye specialist where she was seen approximately three hours after the crash.

According to the case vehicle driver, this eye specialist had examined her two years prior to the crash and prescribed corrective lenses for reading. Further, at that time, her eyes were otherwise normal. According to the case vehicle driver's medical records, the eye specialist diagnosed, post-crash, hyphema and corneal abrasions to her left eye. Also according to the medical records, over the course of the next six months, various complications arose including a traumatic cataract. Eventually, it was necessary to surgically remove the cataract and implant an artificial lens. The case vehicle driver's right eye was not injured and remained entirely normal.

The following table presents an abstraction of the eye specialist's records that indicates the subject's progress throughout the ten months leading up to the cataract surgery. A table, containing the post-crash day calculations, is presented on the reverse side of page 34 (see **Appendix F**).

Days Post-crash	Diagnoses and Comments
0	Dx 1) acute traumatic hyphema left eye Dx 2) corneal abrasions left eye Comments: diffuse blood throughout the anterior chamber with dense clot in the lower half; iris only partially visible.

DISCUSSION (CONT'D.)

Days Post-crash	Diagnoses and Comments
1	Dx 1) acute hyphema left eye, slightly improved Dx 2) corneal abrasion left eye, healing Comments: red blood at lower margin, dark clot toward center; iris now visible and pupil dilated fairly well; moderate pain but tolerable
2	Dx 1) resolving hyphema left eye Dx 2) corneal abrasion left eye healing Dx 3) probable secondary glaucoma left eye Comments: no fresh blood; iris better visualized superiorly, obscured by clots inferiorly; slight increase in pain
3	Dx 1) resolving hyphema left eye Dx 2) resolving glaucoma left eye secondary to Dx #1 Comments: clots still present inferiorly; no increase in pain
5	Dx 1) resolving hyphema left eye Dx 2) traumatic iritis left eye Comments: cornea clear; clot still present inferiorly; less pain
7	Dx 1) resolving hyphema left eye Comments: clot resolved
14	Dx 1) traumatic iridoplegia Dx 2) resolved hyphema Comments: eye much better
28	Dx 1) traumatic iridoplegia left eye Dx 2) traumatic cataract left eye Dx 3) traumatic iritis left eye Dx 4) past hyphema left eye Comments: left anterior lens opacity
55	Dx 1) traumatic iridoplegia, resolving left eye Dx 2) anisocoria secondary to iris sphincter tear left eye Dx 3) vitreous opacities secondary to hyphema left eye Dx 4) minimal anterior cortical traumatic cataract Comments: 1+ anterior lens opacity; vitreous debris
96	Dx 1) traumatic cataract left eye Dx 2) traumatic iridoplegia Comments: pupil left eye still larger than right eye; 2+ anterior density; vitreous debris
228	Dx 1) traumatic cataract left eye, progressing Comments: decided to proceed with surgery

DISCUSSION (CONT'D.)

Days Post-crash	Diagnoses and Comments
297	Dx 1) mature cataract left eye, progressing
300	Comments: surgical extraction of cataract and implantation of artificial lens
300+	Dx 1) pseudophakia Comments: surgery successful; foreign body sensation came and went

Appendix A:

Police Accident Report

STATE OF NEBRASKA

INVESTIGATOR'S MOTOR VEHICLE ACCIDENT REPORT

Agency Case No.

Sheet 1 of 1

FOR STATE USE ONLY

A 4 | 15 | B 1 | C 1 | C

TOTAL NUMBER OF VEHICLES INVOLVED: 1

DATE OF ACCIDENT	MO. [redacted] DAY [redacted] YR. 93
DAY OF ACCIDENT	Sun. M T W T F (X) Sat.
TIME OF ACCIDENT – MILITARY TIME	1515 Hrs.
POLICE NOTIFIED	1600 Hrs.
PLACE OF ACCIDENT	COUNTY [redacted] CITY N/A
POLICE ARRIVED	1621 Hrs.
ROAD ON WHICH ACCIDENT OCCURRED	STREET OR HIGHWAY NO. (If No Highway Number, Identify By Name) No. [redacted] th
ONE-WAY STREET	YES ☐ NO ☒
POSTED SPEED LIMIT	50 MPH
DISTANCE FROM MILEPOST	FEET N/A N S E W OF MILEPOST No. N/A HIGHWAY NO N/A
PRIVATE PROPERTY	YES ☐ NO ☒

Dist.

L M N

IF AT INTERSECTION

NAME OF INTERSECTING ROADWAY: N/A

IF NOT AT INTERSECTION

~~FEET~~ mi .55 N S (X) E W OF NEAREST STREET OR HIGHWAY, BRIDGE, RAILROAD CROSSING OR MILEPOST [redacted] Rd

IF ACCIDENT WAS OUTSIDE CITY LIMITS, INDICATE DISTANCE FROM NEAREST TOWN: MILES 7 1/2 N (X) S E W AND MILES 6 N S E (X) W OF NEAREST CITY OR TOWN [redacted]

VEHICLE NUMBER - 1

DRIVER [redacted] PHONE [redacted]

DRIVER'S ADDRESS CITY, STATE, ZIP [redacted] 60

DRIVER'S LICENSE: STATE NE NUMBER [redacted] DATE OF BIRTH [redacted] SEX M ☐ F ☒

D 2

VEHICLE — LICENSE PLATE: YEAR 93 STATE NE NUMBER [redacted] ESTIMATED DAMAGE $ 7,000 00

YEAR 91 MAKE Ford MODEL LTD BODY STYLE 4dr COLOR wt

E 4

VEHICLE I.D. NUMBER (VIN) 2FACP74F4MX[redacted] CITATION YES ☐ NO ☒

OWNER [redacted] PHONE

OWNER'S ADDRESS CITY, STATE, ZIP Same

F 3

INSURANCE COMPANY [redacted]

POLICY NUMBER [redacted]

G 2

TOWED TO [redacted] TOWED BY [redacted]

VEHICLE NUMBER - 2

DRIVER PHONE

DRIVER'S ADDRESS CITY, STATE, ZIP

DRIVER'S LICENSE STATE NUMBER DATE OF BIRTH SEX M ☐ F ☐

VEHICLE — LICENSE PLATE YEAR STATE NUMBER ESTIMATED DAMAGE $

YEAR MAKE MODEL BODY STYLE COLOR

VEHICLE I.D. NUMBER (VIN) CITATION YES ☐ NO ☐

OWNER PHONE

OWNER'S ADDRESS CITY, STATE, ZIP

INSURANCE COMPANY

POLICY NUMBER

TOWED TO TOWED BY

H 5

VEHICLE MOVEMENT BEFORE COLLISION

VEH. NO.	N	S	E	W	ROAD OR HIGHWAY NAME
1		✓			No [redacted] th
2					

VEHICLE 1 2

1 ☒ ☐ Going ahead
2 ☐ ☐ Passing
3 ☐ ☐ Turning right
4 ☐ ☐ Turning left
5 ☐ ☐ Making "U" turn
6 ☐ ☐ Slowing down
7 ☐ ☐ Starting in traffic lane
8 ☐ ☐ Starting from parked position
9 ☐ ☐ Backing up
10 ☐ ☐ Stopped in traffic lane
11 ☐ ☐ Stalled in traffic lane
12 ☐ ☐ Parked
13 ☐ ☐ Improperly parked
14 ☐ ☐ Merging
15 ☐ ☐ Changing lanes

I 5 | J CODE 14 | VEH. NO 1

CIRCLE POINT OF IMPACT & SHADE DAMAGED AREA

VEH 1: 1 2 3 4 5 6 7 8 (1 circled)

9 ☐ Top & windows
10 ☐ Undercarriage
11 ☒ All areas
12 ☐ Unknown

VEH 2: 1 2 3 4 5 6 7 8

9 ☐ Top & windows
10 ☐ Undercarriage
11 ☐ All areas
12 ☐ Unknown

DISPOSITION OF VEHICLE (Check one per vehicle)

VEHICLE 1 2

1 ☒ ☐ Towed-due to damages
2 ☐ ☐ Towed-other reasons
3 ☐ ☐ Left at scene
4 ☐ ☐ Driven away
5 ☐ ☐ Unknown

VEHICLE CONDITION (Check one per vehicle)

VEHICLE 1 2

1 ☒ ☐ No apparent defects
2 ☐ ☐ Defective brakes
3 ☐ ☐ Defective lights
4 ☐ ☐ Defective signals
5 ☐ ☐ Defective steering
6 ☐ ☐ Defective tires
7 ☐ ☐ Unknown
8 ☐ ☐ Other (Specify)

EXTENT OF VEHICLE DEFORMITY (Check one per vehicle)

VEHICLE 1 2

1 ☐ ☐ None
2 ☐ ☐ Minor
3 ☒ ☐ Moderate
4 ☐ ☐ Severe
5 ☐ ☐ Unknown

MAJOR REASON FOR NOT SEEING DANGER (Check one per vehicle)

VEHICLE 1 2

1 ☒ ☐ None
2 ☐ ☐ Rain, snow, or ice on windows
3 ☐ ☐ Dirty windows
4 ☐ ☐ Glare
5 ☐ ☐ Trees, crops, etc
6 ☐ ☐ Buildings
7 ☐ ☐ Embankment
8 ☐ ☐ Traffic sign
9 ☐ ☐ Billboard
10 ☐ ☐ Parked vehicle
11 ☐ ☐ Moving vehicle
12 ☐ ☐ Other (Specify)

DRIVER'S CONDITION (Check one per vehicle)

VEHICLE 1 2

1 ☒ ☐ Normal
2 ☐ ☐ Fatigue/Asleep
3 ☐ ☐ Illness
4 ☐ ☐ Drinking
5 ☐ ☐ Illegal drugs
6 ☐ ☐ Medication
7 ☐ ☐ Unknown
8 ☐ ☐ Other (Specify)

ALCOHOL TESTING

ALCOHOL LEVEL TESTED	Y	N
Driver No 1		✓
Driver No. 2		
Pedestrian		

RESTRAINT USE — VEH 1: 4

1 - No restraint available
2 - Restraint not used
3 - Lap belt
4 - Lap & shoulder belt
5 - Automatic belt
6 - Child restraint
7 - Unknown

AIR BAG SEAT POSITION	DID AIR BAG DEPLOY? YES	NO	(✓) IF NO AIR BAG AVAILABLE
Driver Seat	✓		
Front Passenger			✓

HELMET USE	MOTORCYCLE YES	MOTORCYCLE NO	BICYCLE YES	BICYCLE NO
Operator				
Passenger				

K 8

RESTRAINT USE — VEH 2

1 - No restraint available
2 - Restraint not used
3 - Lap belt
4 - Lap & shoulder belt
5 - Automatic belt
6 - Child restraint
7 - Unknown

AIR BAG SEAT POSITION	DID AIR BAG DEPLOY? YES	NO	(✓) IF NO AIR BAG AVAILABLE
Driver Seat			
Front Passenger			

HELMET USE	MOTORCYCLE YES	MOTORCYCLE NO	BICYCLE YES	BICYCLE NO
Operator				
Passenger				

COMPLETE THIS SECTION FOR ALL INJURED PERSONS (Complete a continuation report, if more than three were injured)

RESCUE UNITS AT SCENE 1. N/A 2.

VEH. #	NAME	ADDRESS	DATE OF BIRTH	SEX M F	1 Seat Pos	2 Eject	3 Body Reg	4 Inj Sev	5 Trans
	[redacted]	[redacted]	[redacted]	F	1	1	3	1	

DR Form 40, Jan 93

THIS FORM REPLACES DR FORM 40 SEP 90
PREVIOUS EDITIONS WILL BE DESTROYED

THE FOLLOWING INFORMATION IS REQUIRED FOR ALL ACCIDENTS

INDICATE BY DIAGRAM WHAT HAPPENED

Indicate North by Arrow

RP NW Edge of roadway : bridge
(sign G[redacted])
A - Vehicle left roadway
B - Final rest left front tire

RP to A - 86° N, 0° W
RP to B - 177° N, 12° W

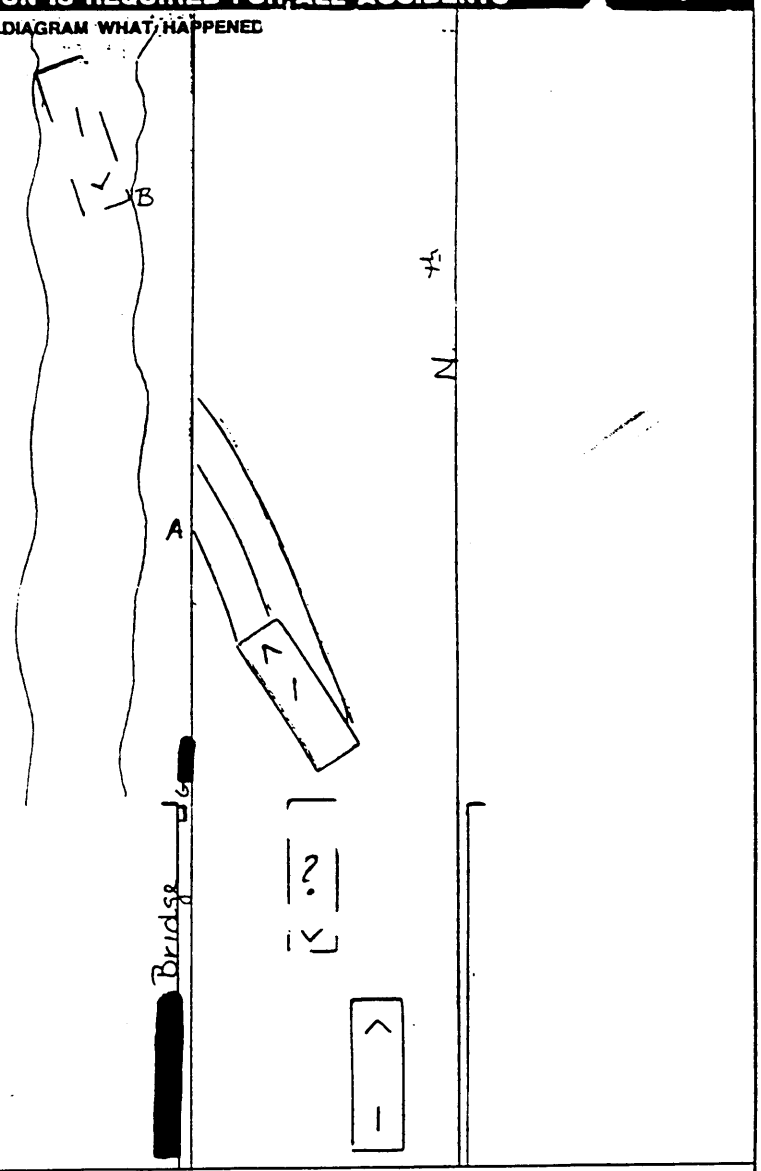


Diagram Not to Scale

DESCRIPTION OF ACCIDENT BASED ON OFFICER'S INVESTIGATION

Vehicle #1 was northbound on No[redacted] when it lost control and slid into a ditch on the west side of the road. The driver of vehicle #1 stated another vehicle was southbound on No[redacted] driving in the center of the road. Driver of #1 said she swerved to avoid the other vehicle and lost control on a snow covered bridge before sliding into the ditch.

PROPERTY	OBJECT DAMAGED	NAME OF OWNER	ADDRESS	PHONE	APPROX COST OF DAMAGE $
PROPERTY	OBJECT DAMAGED	NAME OF OWNER	ADDRESS	PHONE	APPROX COST OF DAMAGE $
WITNESSES	NAME	ADDRESS			PHONE
WITNESSES	NAME	ADDRESS			PHONE

WAS INVESTIGATION MADE AT SCENE? ☒ YES ☐ NO	IS INVESTIGATION COMPLETE? ☒ YES ☐ NO	DRIVER'S REPORT FORM FURNISHED TO? ☒ 1 ☐ 2	WERE PHOTOGRAPHS TAKEN? ☐ YES ☒ NO	SHOULD LOCATION HAVE AN ENGINEERING STUDY? ☐ YES ☒ NO	OFFICER NO. [redacted]	DATE OF REPORT	
INVESTIGATOR'S PRINTED OR TYPED NAME [redacted]	INVESTIGATOR'S SIGNATURE [redacted]	DEPARTMENT [redacted] Sheriff's Office	TROOP	MO [redacted]	DAY [redacted]	YR 93	

Appendix B:

NASS CDS Accident Form

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

ACCIDENT FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number: 10
2. Case Number - Stratum: 9313

IDENTIFICATION

3. Number of General Vehicle Forms Submitted: 01
4. Date of Accident (Month,Day,Year): [redacted] /93
5. Time of Accident: [redacted]

Code reported military time of accident.

NOTE: Midnight = 2400
Unknown = 9999

SPECIAL STUDIES - INDICATORS

Check (✓) each special study (SS14-SS18 below) that has been completed; code 1 for the checked special studies and 0 for the special studies not checked.

6. ___SS14 Fatal AOPS: 0
7. ___SS15 Administrative Use: 0
8. ___SS16 _____: 0
9. ___SS17 _____: 0
10. ___SS18 _____: 0

NUMBER OF EVENTS

11. Number of Recorded Events in This Accident: 01

Code the number of events which occurred in this accident.

ACCIDENT EVENTS

For each event that occurred in the accident, code the lowest numbered vehicle in the left columns and the other involved vehicle or object on the right.

Accident Event Sequence Number	Vehicle Number	Class Of Vehicle	General Area of Damage	Vehicle Number or Object Contacted	Class Of Vehicle	General Area of Damage
12. 01	13. 01	14. 04	15. F	16. 44	17. 00	18. 0
19. 02	20.	21.	22.	23.	24.	25.
26. 03	27.	28.	29.	30.	31.	32.
33. 04	34.	35.	36.	37.	38.	39.
40. 05	41.	42.	43.	44.	45.	46.

IF GREATER THAN FIVE EVENTS, CONTINUE CODING ON THE ACCIDENT EVENT SUPPLEMENT

CODES FOR CLASS OF VEHICLE

(00) Not a motor vehicle
(01) Subcompact/mini (wheelbase < 254 cm)
(02) Compact (wheelbase ≥ 254 but < 265 cm)
(03) Intermediate (wheelbase ≥ 265 but < 278 cm)
(04) Full size (wheelbase ≥ 278 but < 291 cm)
(05) Largest (wheelbase ≥ 291 cm)
(09) Unknown passenger car size
(11) Compact utility vehicle
(12) Large utility vehicle (≤ 4,500 kgs GVWR)
(13) Passenger van (≤ 4,500 kgs GVWR)
(14) Other van (≤ 4,500 kgs GVWR)
(15) Pickup truck (≤ 4,500 kgs GVWR)
(18) Other truck (≤ 4,500 kgs GVWR)
(19) Unknown light truck type
(20) School bus
(21) Other bus
(22) Truck (> 4,500 kgs GVWR)
(23) Tractor without trailer
(24) Tractor-trailer(s)
(25) Motored cycle
(28) Other vehicle
(99) Unknown

CODES FOR GENERAL AREA OF DAMAGE (GAD)

CDS APPLICABLE AND OTHER VEHICLES

(0) Not a motor vehicle
(N) Noncollision
(F) Front
(R) Right side
(L) Left side
(B) Back
(T) Top
(U) Undercarriage
(9) Unknown

TDC APPLICABLE VEHICLES

(0) Not a motor vehicle
(N) Noncollision
(F) Front
(R) Right side
(L) Left side
(B) Back of unit with cargo area (rear of trailer or straight truck)
(D) Back (rear of tractor)
(C) Rear of cab
(V) Front of cargo area
(T) Top
(U) Undercarriage
(9) Unknown

CODES FOR VEHICLE NUMBER OR 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

Appendix C:

NASS CDS General Vehicle Form:

Case Vehicle

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: 10
2. Case Number - Stratum: 9313
3. Vehicle Number: 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year: 91
   Code the last two digits of the model year
   (99) Unknown

5. Vehicle Make (specify): 12
   Ford
   Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
   (99) Unknown

6. Vehicle Model (specify): 016
   LTD / Crown Victoria
   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
   2FACP74F4MX[redacted]
   Left justify; Slash zeros and letter Z (0 and Z)
   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: 999
    Code to the nearest kph (NOTE: 000 means less than 0.5 kph)
    (160) 159.5 kph and above
    (999) Unknown
    ___ 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: 080
    (000) No statutory limit
    Code posted or statutory speed limit in kph
    (999) Unknown
    52 mph X 1.6093 = ___ kph

14. Attempted Avoidance Maneuver: 07
    (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: 07
    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: 01
    (00-96) Code actual number of occupants for this vehicle
    (97) 97 or more
    (99) Unknown

18. Number of Occupant Forms Submitted: 01

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight: 1,730
    3822 Code weight to nearest 10 kilograms.
    (045) Less than 450 kilograms
    (610) 6,100 kilograms or more
    (999) Unknown

    3,822 lbs X .4536 = 1,734 kgs

    Source: MVMA Specifications

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: 998

28. Heading Angle For Other Vehicle: 998

29. Basis for Total Delta V (highest) 5

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		
31. Longitudinal Component of Delta V		+/- 999
____ Nearest kph		

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

(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) Ø
(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 Ø
(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 Φ
    (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 Φ
    (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 Φ
    (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. 4	41. Φ
Depressant Drug	42.	43.
Stimulant Drug	44.	45.
Hallucinogen Drug	46.	47.
Cannabinoid Drug	48.	49.
Phencyclidine (PCP)	50.	51.
Inhalant Drug	52.	53.
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54.	55.

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) Ø
(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 Ø
(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 Ø
(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 ØØ

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied Ø
(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 Ø
(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) Ø1
(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

PRECRASH DATA (Continued)

65. Critical Precrash Event 62

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 4
(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) 4
(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.

Appendix D:

NASS CDS Interview Form:

Case Vehicle Driver

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

INTERVIEW FORM (A)

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number: 10
2. Case Number - Stratum: 93 13
3. Vehicle Number: 01

Interviewee(s) Role or Name(s): driver

Review all available information and interview questions prior to conducting interview(s) to ensure the acquisition of all pertinent data.

If the driver was not the person interviewed, was an appointment made for a follow-up interview?

DRIVER'S DESCRIPTION OF ACCIDENT EVENTS

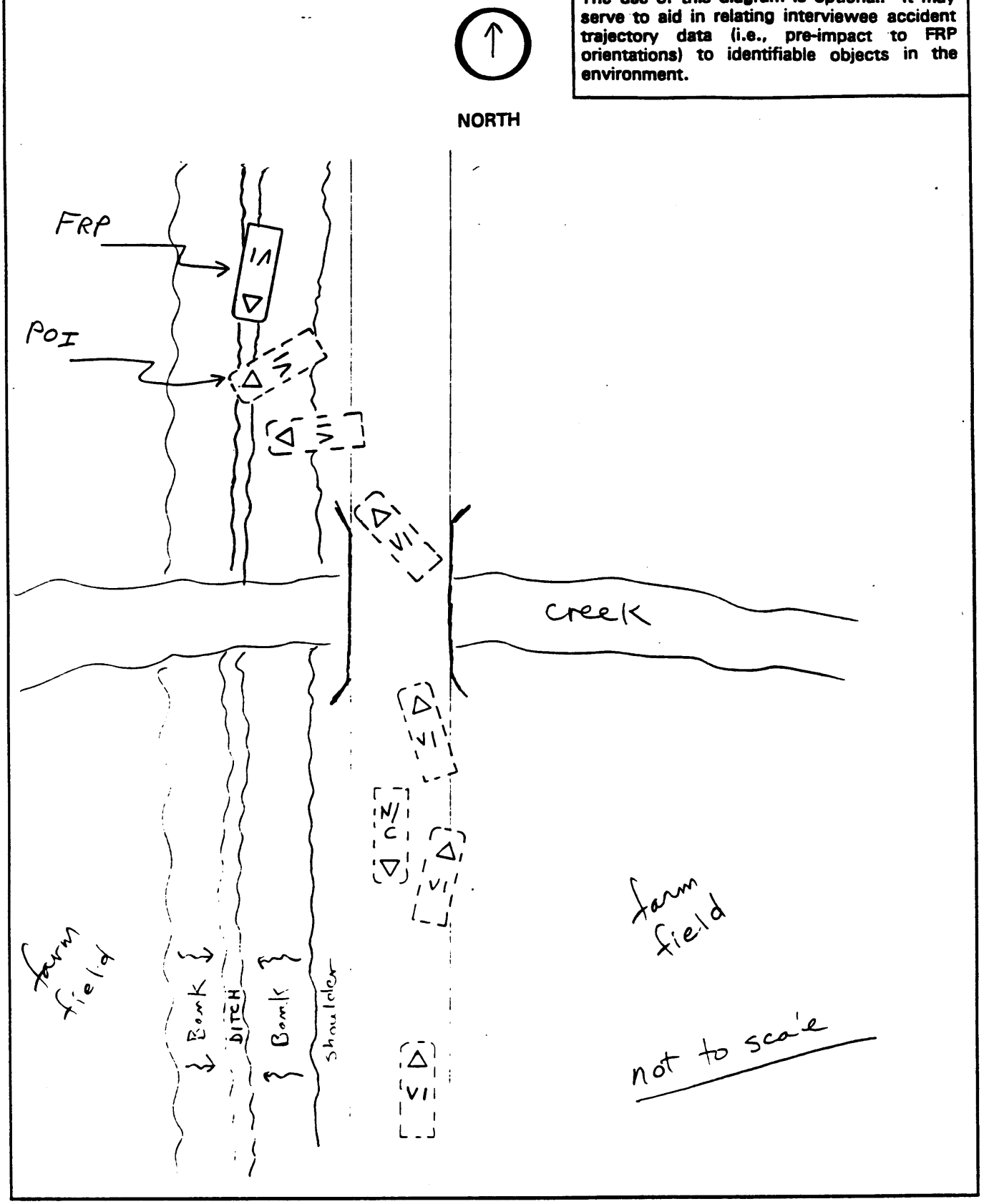
N-bound on gravel road with packed snow and ice plus fresh snow, approaching small bridge, at ≈40 mph. Encountered on-coming S-bound car; steered (R) to avoid. Avoided car, but now headed toward bridge abutment. Steered (L), avoided abutment, but lost control on bridge. Car went into CCW yaw, cleared bridge and went off (L) roadedge, down into a steep ditch. front (R) corner of car impacted opposite ditch bank causing airbag to deploy. Car rotated further CCW after impact and came to rest facing south. Got out of car with no difficulty. Passing neighbor picked her up and took her home. Husband took her to family physician. family physician noted eye problem; went to eye doctor immediately.

OCCUPANT'S DESCRIPTION OF ACCIDENT EVENTS

no other occupant

ACCIDENT DIAGRAM

The use of this diagram is optional. It may serve to aid in relating interviewee accident trajectory data (i.e., pre-impact to FRP orientations) to identifiable objects in the environment.



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

INTERVIEW FORM (B)

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 93 13
3. Vehicle Number 01

Interviewee(s) Role or Name(s): driver

ACCIDENT DATA QUESTIONS

1. Can you tell me in which direction you were traveling?

[✓] North [ ] South [ ] East [ ] West

(Optional - Where were you coming from or going to?

2. In which lane were you traveling?
(Note: Lane 1 is designated as the right curb lane.)

[1] [2] [3] [4] [ ] Other (specify):

3. Can you remember your estimated travel speed (in miles per hour) before the accident?

[ ] Stopped	[ ] 1-10	[ ] 10-20
[ ] 20-30	[✓] 30-40	[ ] 40-50
[ ] 50-60	[ ] 60-70	[ ] 70+

4. Just before the accident, can you tell me what you were intending to do or were doing?

[✓] Going straight	[ ] Stopped
[ ] slowing	[ ] Accelerating
[ ] Turning left	[ ] Turning right
[ ] Changing lanes to left	[ ] Changing lanes to right
[ ] Backing	
[ ] Other (specify):	

5. Did you experience any loss of control due to weather conditions or mechanical problems?

[ ] No
[✓] Yes (If yes, describe below)
snow & ice

6. Did you have to take any avoidance actions prior to the accident?

[ ] No - Go to question 7
[✓] Yes - Go to question 6a

6a. What actions did you take?

[ ] Braking with lock-up
[ ] Braking without lock-up
[ ] Releasing brakes
[ ] Accelerating
[✓] Steering left
[✓] Steering right
[ ] Other (specify):

no braking

7. Where was your vehicle at the time of the collision?

[ ] Original travel lane	[ ] Different travel lane
[ ] In intersection	[ ] Off roadway to right
[✓] Off roadway to left	
[ ] Other (specify):	

8. Was your travel speed at the time of the collision different from your previous travel speed?

[✓] No
[ ] Lower
[ ] higher
[ ] Unknown

8a. Can you estimate your speed at the time of the collision?

[ ] Stopped	[ ] 1-10	[ ] 10-20
[ ] 20-30	[✓] 30-40	[ ] 40-50
[ ] 50-60	[ ] 60-70	[ ] 70+

9. Immediately following the collision, can you describe how your vehicle moved to its stopped position?
rotated CCW, approx 180°

10. Can you tell me how many collisions your vehicle had during the accident and the source of the collisions?

One only

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9313
3. Vehicle Number 01
4. Occupant Number 01

VEHICLE/DRIVER DATA QUESTIONS

1. Can you tell me the year, make, model of your vehicle?
   1991 (Year), Ford (Make), Crown Victoria (Model)

2. Can you describe the damage to your vehicle?
   front & (R) side; engine & frame

3. Was there any previous damage to your vehicle that is not related to this accident?
   [4] No
   [ ] Yes (If "yes", describe below)

4. Did any of the doors (hatch, tailgate) open during the accident?
   [4] No
   [ ] Yes (If "Yes", describe below)

5. Did any of the windows break during the accident?
   [4] No
   [ ] Yes (If "Yes", describe below)

6. Does your vehicle have a glove compartment?
   [ ] No
   [4] Yes

6a. Did the glove compartment door come open during the accident?
   [4] No
   [ ] Yes
   [ ] Unknown

7. Does your vehicle have "seat belts"?
   [ ] No (If "No", go to question 7b)
   [4] Yes (If "Yes", go to question 7a)

7a. Can you describe the type of seat belt for each seat?

Driver's seat	[ ] Lap	[4] Lap and shoulder
Front seat middle	[4] Lap	[ ] Lap and shoulder
Front seat right	[ ] Lap	[4] Lap and shoulder
Rear seat left	[ ] Lap	[4] Lap and shoulder
Rear seat middle	[4] Lap	[ ] Lap and shoulder
Rear seat right	[ ] Lap	[4] Lap and shoulder

(Identify seat belts for third row and beyond

7b. Were any of the belts removed or not functional prior to the accident?
   [4] No
   [ ] Yes (If "Yes", specify which belt and describe problem)

8. Do any of the front belts move along a motorized track when the door is opened or closed?
   [4] No (If "No", go to question 9)
   [ ] Yes (If "Yes", what seat location?)
      [ ] Left Front
      [ ] Right Front

8a. Were the motorized belts working properly before the accident?
   [ ] No (If "No", describe condition below)
   [ ] Yes

8b. Were the belts connected to the track prior to the accident?
   [ ] No
   [ ] Yes
   [ ] Unknown

9. Do any of the front "seat" belts attach to the door such that when the door is opened the belt travels with the door?
   [4] No (go to question 10)
   [ ] Yes

9a. Does this belt come across the _____?
   [ ] Chest only
   [ ] Lap and chest

9b. Was this belt connected prior to the accident?
   [ ] No
   [ ] Yes
   [ ] Unknown

AIR BAGS

10. Is your vehicle equipped with a driver's side air bag?
   [ ] No (go to question 11)
   [4] Yes (go to question 10a)
   [ ] Unknown (go to question 11)

10a. Did the air bag inflate during the accident?
   [ ] No (go to questions 10b and 10c)
   [4] Yes (go to question 10e)

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9313
3. Vehicle Number 01
4. Occupant Number 01

VEHICLE/DRIVER DATA QUESTIONS (CONTINUED)

10b. Was the air bag wiring disconnected prior to the accident?
[4] No
[ ] Yes (If "Yes", describe previous condition)
_____
_____
[ ] Unknown

10c. Was your vehicle involved in any accidents prior to this accident which inflated the air bag?
[4] No (go to question 11)
[ ] Yes (go to question 10d)
[ ] Unknown

10d. Was the air bag re-installed after the accident?
[ ] No (go to question 11)
[ ] Yes
[ ] Unknown

10e. Did the air bag inflate as you expected?
[ ] No (If "No" describe below)
_____
[4] Yes
[ ] Unknown

11. Is your vehicle equipped with a passenger side air bag?
[4] No (If "No", go to question 12)
[ ] Yes (If "Yes", go to question 11a)
[ ] Unknown (If "Unknown", go to question 12)

11a. Did the passenger air bag inflate during the accident?
[ ] No (go to question 11b)
[ ] Yes (go to question 12)

11b. Was the passenger air bag wiring disconnected prior to the accident?
[ ] No
[ ] Yes (If "Yes", describe below)
_____
_____
[ ] Unknown

11c. Was the passenger air bag inflated in a previous accident?
[ ] No (go to question 12)
[ ] Yes (go to question 11d)
[ ] Unknown

11d. Was the passenger air bag re-installed after the accident?
[ ] No (go to question 12)
[ ] Yes
[ ] Unknown

11e. Did the passenger air bag inflate as you expected?
[ ] No (If "No" describe below)
_____
[ ] Yes
[ ] Unknown

CHILD SAFETY SEAT

12. Was there a person in a child safety seat in your vehicle?
[4] No (If "No", go to question 13)
[ ] Yes
[ ] Unknown

12a. Can you tell me the manufacturer and model of the child safety seat?
_____
_____

12b. Can you describe the type of child safety seat?
[ ] Infant
[ ] Toddler
[ ] Convertible
[ ] Booster
[ ] Other (specify): _____
[ ] Unknown

12c. Where was the child safety seat(s) located?
[12] [13]
[21] [22] [23]
[31] [32] [33]
[Other] (specify): _____

12d. Can you tell me which direction the child safety seat was facing prior to the accident?
[ ] Rear facing
[ ] Forward facing,
[ ] Other (specify):_____
[ ] Unknown

12e. Was a seat belt used to hold the child seat in place?
[ ] No (If "No", go to fquestion 12g)
[ ] Yes (If "Yes", go to question 12f)
[ ] Unknown

12f. Can you describe how the seat belt was secured to the child seat?
[ ] Looped through designated rear framing struts?
[ ] Looped through arm rest slots?
[ ] Belt across safety shield?
[ ] Looped through rear frame outside the designated framing struts?
[ ] Other (specify): _____
[ ] Unknown

12g. What was the child safety seat equipped with at the time of purchase? (check all that apply)
[ ] Harness
[ ] Shield
[ ] Tether strap

If any box is checked, ask questions 12h - 12i.

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9313
3. Vehicle Number 01
4. Occupant Number 01

VEHICLE/DRIVER DATA QUESTIONS (CONTINUED)

12h. Were any of these items added after you owned the child safety seat?
[ ] Yes
(specify_____)
[ ] No
[ ] Unknown

12i. Were any of these items used during the accident?
[ ] Yes (If "Yes", check all that apply)
( ) Harness
( ) Shield
( ) Tether strap)
[ ] No
[ ] Unknown

CARGO WEIGHT AND MILEAGE

13. Was there any cargo in your vehicle?
[X] No (If "No", go to question 14)
[ ] Yes (If "Yes", go to question 13a)
[ ] Unknown

13a. Can you estimate the weight of the cargo?

_____lbs.

Cargo description

_____

_____

14. Can you tell me the mileage on the vehicle?

UNK. miles

OPTIONAL

If you do not know where the vehicle is or if the owner's permission is needed for inspection.

15. Do you know where the vehicle is currently located?
repaired, in service

16. May I take a look at your vehicle to assess the damage?
[ ] No N/A
[ ] Yes

DRIVER ONLY

17. What race do you consider yourself?
[X] White
[ ] Black
[ ] American Indian, Eskimo or Aleut, Asian or Pacific Islander
[ ] Other (specify:_____)
[ ] Unknown.

18. Are you of hispanic origin?
[X] No
[ ] Yes

in response to special queries:

- The car had an adjustable (tilt) steering wheel, tilted slightly up.
- The car had a bench seat, adjusted fully rearward.
- The interviewee volunteered that she is a large person; the wheel and seat were arranged for her convenience in entry and egress.

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 93 13
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT DATA QUESTIONS

1. Was there anyone else in your vehicle at the time of the accident?
[4] No (If "No", go to question 4)
[ ] Yes (If "Yes", specify number in question 2 below and then go to question 3)
[ ] Unknown

2. How many?
[1] One other person
[2] Two other persons
[3] Three other persons
[4] Four other persons
[5] Five other persons
[6] Six other persons
[7] Seven or more other persons
(specify number:)_____

3. Where was this person sitting? (Circle seating positions)

	[12]	[13]
[21]	[22]	[23]
[31]	[32]	[33]

[ ] Other (specify:)_____

OCCUPANT CHARACTERISTICS

4. Can I have your (his/her) height, weight, age, and sex?
Height 5'9" Weight 200 lbs. Age 60 yrs
Sex: [ ] Male [X] Female

OCCUPANT POSTURE

5. Can you tell me how you (he/she was) were sitting in your vehicle?
Normal

5a. Can you describe the location of your (his/her) feet just prior to the collision?
(L) on floor (R) on gas

5b. Can you describe the location of your (his/her) arms?
holding wheel with 2 hands

5c. Was your (his/her) back resting against the seat back rest?
[ ] No (If "No", describe the position)_____
[4] Yes
[ ] Unknown

5d. Were you (Was he/she)
[4] Sitting upright or
[ ] Leaning to left side, or
[ ] Leaning to right side?

OCCUPANT EJECTION

6. Were you (Was he/she) or any part of your (his/her) body thrown from the vehicle during the accident?
[4] No (If "No", go to question 7)
[ ] Yes (If "Yes", go to question 6a)
[ ] Unknown

6a. Can you remember what part of the vehicle you were (he/she was) thrown out?
[ ] No
[ ] Yes (Describe:)_____

OCCUPANT RESTRAINT

7. Were you (Was he/she) wearing a seat belt just before the accident?
[ ] No (If "No", go to question 8)
[4] Yes
[ ] Unknown

7a. Were you (Was he/she) wearing the
[ ] Lap belt?
[4] Lap and Shoulder belt?
[ ] Shoulder belt?

7b. Can you describe how you were (he/she was) wearing the lap belt?
[4] Across the stomach
[ ] Low on lap
[ ] Other (specify:)_____
[ ] Unknown

7c. Can you describe how you were (he/she was) wearing the shoulder belt?
[4] Over the shoulder
[ ] Under the arm
[ ] Behind the back
[ ] Behind the seat
[ ] Other (specify:)_____

7d. Did any part of the belt system break or tear?
[4] No
[ ] Yes (If "Yes", describe)_____
[ ] Unknown

OCCUPANT ENTRAPMENT

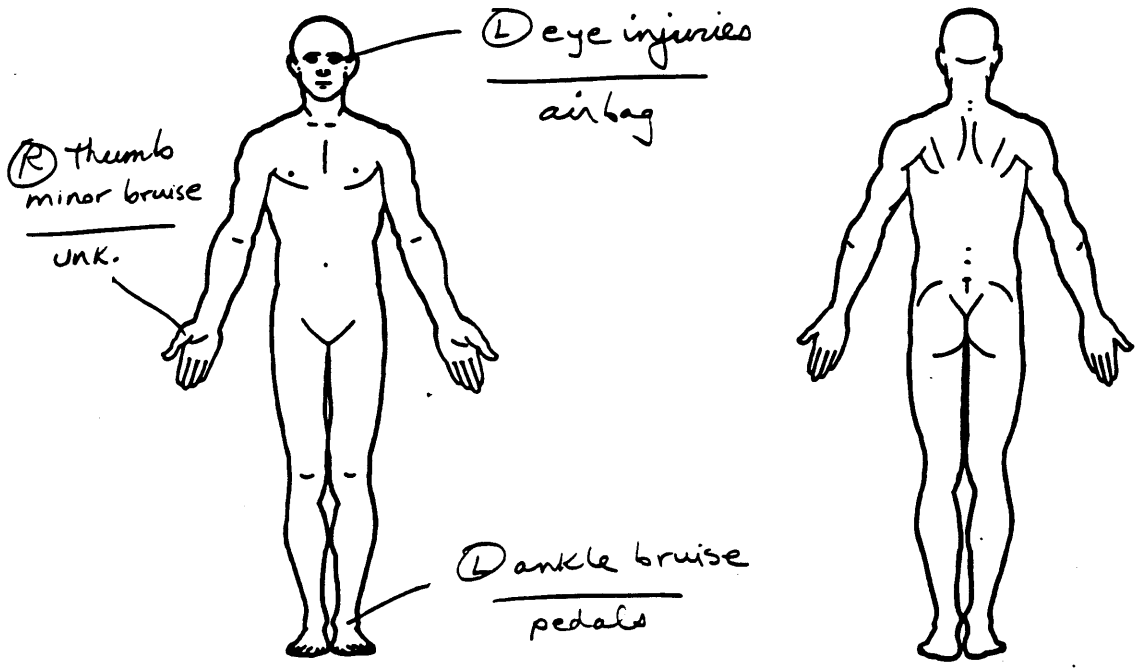
8. Were you (Was he/she) trapped in the vehicle?
[4] No
[ ] Yes (If "Yes", describe)
[ ] Unknown

PSU Number 10 Case Number—Stratum 93 13 Vehicle Number 01 Occupant Number 01

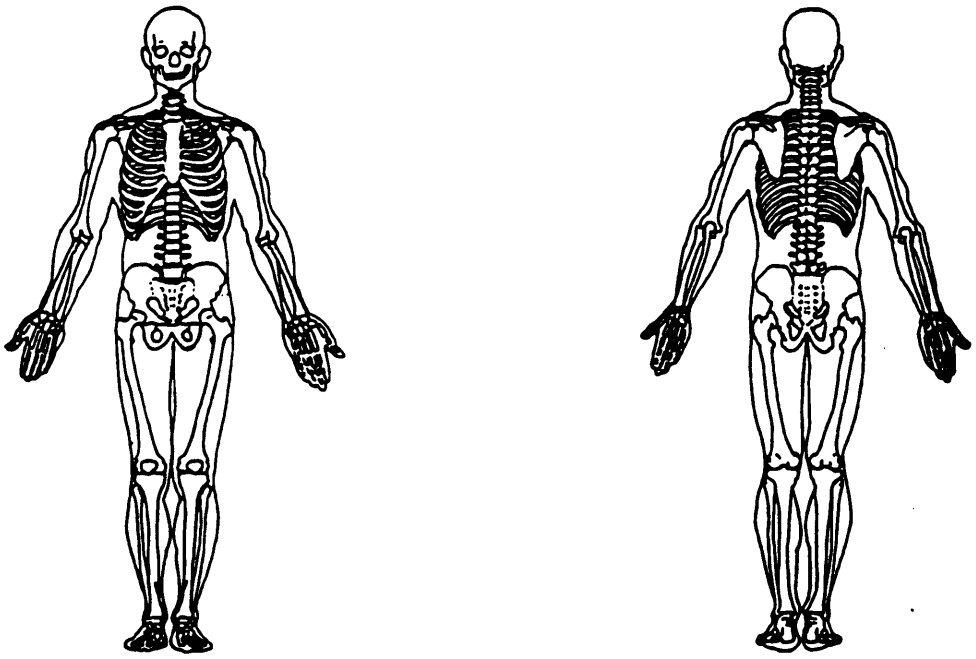
INJURY DATA FROM INTERVIEWEE(S)

Indicate the *Location, Lesion, Detail, and Source* of all injuries. Specify interviewee(s): Same person

SOFT TISSUE/INTERNAL INJURIES



SKELETAL INJURIES



The space provided on the back of this page may be used to document injuries noted by the interviewee(s).

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 93 13
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT INJURY DATA QUESTIONS

1. Were you (Was he/she) injured?
   [ ] No (If "No", go to next occupant. Stop if no other occupant.)
   [X] Yes (If "Yes", complete Occupant Injury Questions)
   [ ] Unknown

2. Did you (he/she) receive any cuts, abrasions, or bruises?
   [ ] No (go to question 3)
   [X] Yes (If "Yes", record the exact location(s) and size on the manikin(s).)
   [ ] Unknown

2a. Do you know what caused your (his/her) injury(s)?
   [ ] No
   [X] Yes (If "Yes", specify the component(s) or object(s) on the manikin(s).)
   [ ] Unknown

3. Did you (he/she) experience any broken bones?
   [X] No (If "No", go to question 4)
   [ ] Yes (If "Yes", record the exact location(s) and type of fracture(s) on the manikin(s), and then go to question 3a.)
   [ ] Unknown

3a. Do you know what caused the injury(s)?
   [ ] No
   [ ] Yes (If "Yes", specify the component(s) or object(s) on the manikin(s).)
   [ ] Unknown

4. Did you (he/she) injure your (his/her) head?
   [X] No (If "No", go to question 5)
   [ ] Yes (If "Yes", describe the type of injury(s) on the manikin(s), then go to question 4a.)
   [ ] Unknown

4a. Do you know what caused the injury(s)?
   [ ] No
   [ ] Yes (If "Yes", specify the component(s) on the manikin(s).)
   [ ] Unknown

5. Were any of your (his/her) internal organs injured?
   [X] No (If "No", go to question 6)
   [ ] Yes (If "Yes", thoroughly describe the type of injury(s) and specify the internal organ(s) injured on the manikin(s), and then go to question 5a.)
   [ ] Unknown

5a. Do you know what caused this injury?
   [ ] No
   [ ] Yes (If "Yes", specify the component(s) on the manikin(s).)
   [ ] Unknown

6. Did you (he/she) suffer any joint sprains or muscle strains?
   [X] No (If "No", go to question 7)
   [ ] Yes (If "Yes", specify on the manikin(s), and then go to question 6a.)
   [ ] Unknown

6a. Do you know what caused the injury(s)?
   [ ] No
   [ ] Yes (If "Yes", specify the component(s) on the manikin(s).)
   [ ] Unknown

7. Did you (he/she) receive treatment for your (his/her) injury(s)?
   [ ] No (If "No", go to question 8)
   [X] Yes (If "Yes", go to question 7a)

7a. Were you (Was he/she) treated by:
   [ ] Hospital/trauma center? (specify hospital name): _____
   [ ] Medical clinic
   [ ] Out patient surgery? (specify medical facility:)_____
   [ ] Paramedics or first aid at the scene?
   [X] A doctor in his/her office? 1st + 2nd
   [ ] Treated at home?
   [ ] None of the above, go to question 8.

7b. Were you (Was he/she) treated and released from the emergency room?
   [X] No (If "No", go to question 7c.)
   [ ] Yes (If "Yes", go to question 7e.)

7c. Were you (Was he/she) hospitalized?
   [X] No (If "No", give an explanation)
   [ ] Yes (If "Yes", go to question 7d.)

_____

_____

7d. How many days were you (was he/she) in the hospital?
_____ days

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9313
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT INJURY DATA QUESTIONS (CONTINUED)

7e. Have you (Has he/she) received any follow-up treatment?
[ ] No
[X] Yes (If "Yes", describe:)

_____

_____

[ ] Unknown

7f. In order to achieve the best possible scientific data regarding your (his/her) injury(s), we need to obtain a copy of your (his/her) medical reports. Would you (he/she) sign a medical release form?
[ ] No
[X] Yes (If "Yes", mail or present the form for signature.)

8. Have you (he/she) lost any days from work or school (college)?
[X] No
[ ] Yes (If "Yes", determine the number of days lost) (Specify:)_____
[ ] Not working prior to the accident
[ ] Unknown

Appendix E:

NASS CDS Occupant Assessment Form:

Case Vehicle Driver

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: 10
2. Case Number - Stratum: 9313
3. Vehicle Number: 01
4. Occupant Number: 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age: 60
   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: 175
   Code actual height to the nearest centimeter.
   (999) Unknown
   69 inches X 2.54 = ___ centimeters

8. Occupant's Weight: 091
   Code actual weight to the nearest kilogram.
   (999)Unknown
   200 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: 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) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area
    (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) 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) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment
    (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 — Ø4
(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 — 6
(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 — Ø
(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 — 4
(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: 9
    (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): 99
    (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): 9
    (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 Ø Ø Ø
(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 Ø
(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 Ø Ø
(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 Ø Ø

32. Child Safety Seat Shield Usage Ø Ø

33. Child Safety Seat Tether Usage Ø Ø

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 6

(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) 5

(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 C Ø

(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 7

____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 Ø Ø

____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 Ø Ø

41. 2nd Medically Reported Cause of Death Ø Ø

42. 3rd Medically Reported Cause of Death Ø Ø

____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 Ø 9

____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 — Ø
    (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 — Ø
    (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 — Ø
    (0) Not equipped/not available
    (1) Non-motorized system
    (2) Motorized system
    (9) Unknown

47. Proper Use of Automatic (Passive Belt System — Ø
    (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 — Ø
    (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) — 9
    (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) — Ø 2
    (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 — Ø 1
    (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 [ ]

Appendix F:

NASS CDS Occupant Injury Form:

Case Vehicle Driver

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	10	3. Vehicle Number	01
2. Case Number - Stratum	9313	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.

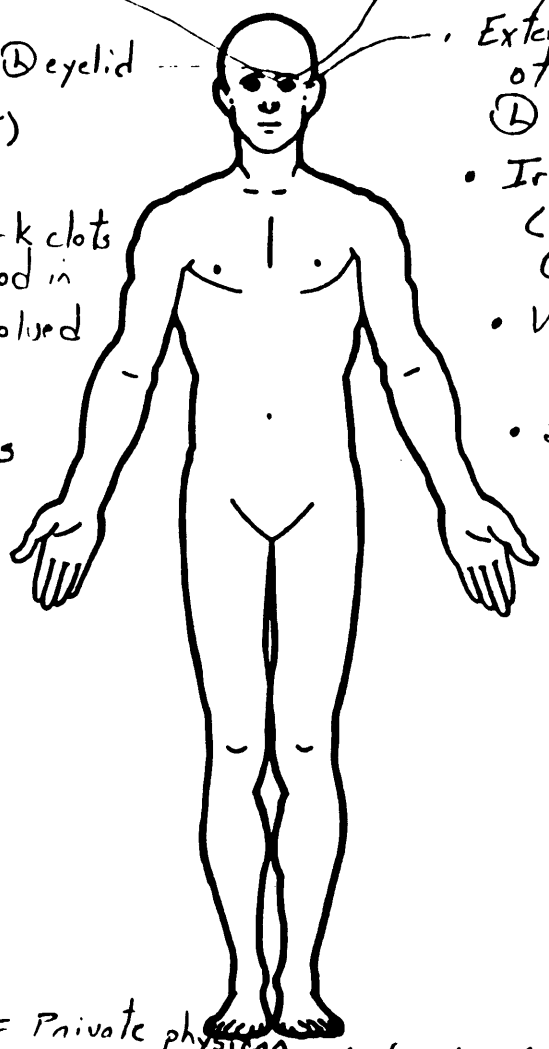
	Source of Injury Data	O.I.C.-A.I.S Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
1st	5. 7	6. 7	7. 9	8. 04	9. 02	10. 1	11. 1	12. 45	13. 2	14. 1	15. 00
2nd	16. 7	17. 8	18. 9	19. 04	20. 02	21. 1	22. 2	23. 59	24. 1	25. 1	26. 99
3rd	27. 3	28. 2	29. 4	30. 06	31. 04	32. 1	33. 2	34. 45	35. 1	36. 1	37. 00
4th	38. 3	39. 2	40. 4	41. 08	42. 00	43. 1	44. 2	45. 45	46. 1	47. 1	48. 00
5th	49. 3	50. 2	51. 4	52. 06	53. 02	54. 1	55. 2	56. 45	57. 1	58. 1	59. 00
6th	60. 8	61. 2	62. 9	63. 74	64. 02	65. 1	66. 2	67. 45	68. 1	69. 1	70. 00
7th	71. 8	72. 2	73. 9	74. 72	75. 02	76. 1	77. 2	78. 45	79. 1	80. 1	81. 00
8th	82. 8	83. 2	84. 4	85. 04	86. 16	87. 1	88. 2	89. 45	90. 1	91. 1	92. 00
9th	93. 3	94. 2	95. 4	96. 16	97. 99	98. 1	99. 2	100. 45	101. 1	102. 1	103. 00
10th	104.	105.	106.	107.	108.	109.	110.	111.	112.	113.	114.

OFFICIAL INJURY DATA — SOFT TISSUE INJURIES

• Air bag hit (L) eye

{#} = # equals days post crash that diagnosis was first made

(PP, HP, NMJ) Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



• Periorbital contusions (L) eye (NMJ)

• Abrasions (L) eyelid (NMJ)

• Dense dark clots + red blood in eye, resolved (PP)

• Vitreous opacity + debris (PP)

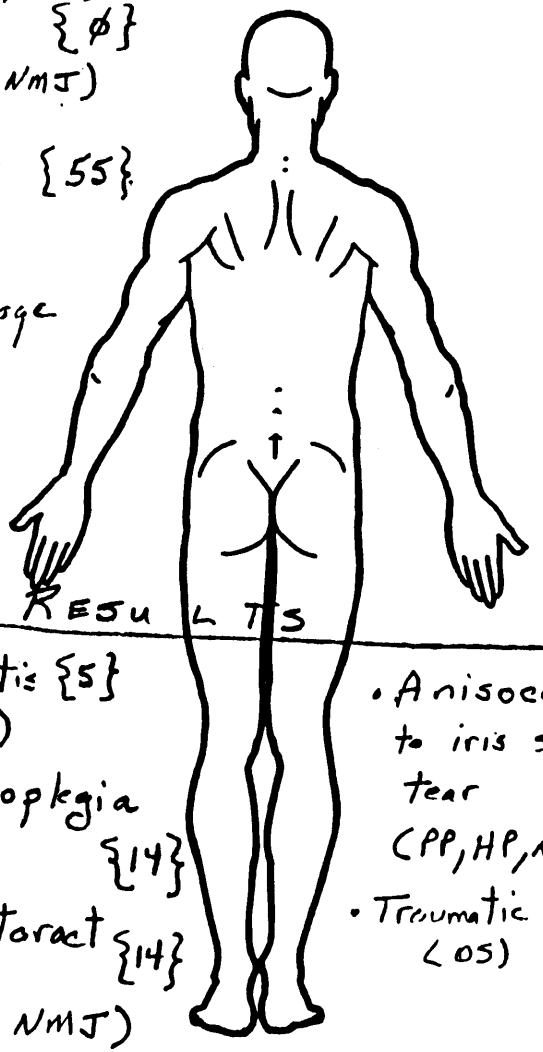
• Acute traumatic hyphema (L) (PP, HP, NMJ) {0}

• Extensive abrasions of corena (PP, HP, NMJ) (L) eye {0}

• Iris sphincter tear {55} (rupture (PP, HP, NMJ)

• Vitreous hemorrhage (HP, NMJ)

• Subconjunctival hemorrhage (NMJ)



RESULTS

• Traumatic Iritis {5} (L) eye (PP)

• Traumatic iridoplegia (L) eye {14} (PP, HP)

• Traumatic cataract {14} (L) eye (PP, HP, OS, NMJ)

• Anisocoria 2° to iris sphincter tear {55} (PP, HP, NMJ)

• Traumatic iridodialysis (OS)

• PP = Private physician

• NMJ = Nebraska Medical Journal

OFFICIAL INJURY DATA — SKELETAL INJURIES

Restrained?

__ No

✓ Yes

(PP, NMJ)

belt on; was wearing 3 pt seat belt
(PP) (PP, NMJ)

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

Blood Alcohol Level (mg/dl)

BAL = ____

Glasgow Coma Scale Score

GCSS = ____

Units of Blood Given

Units = ____

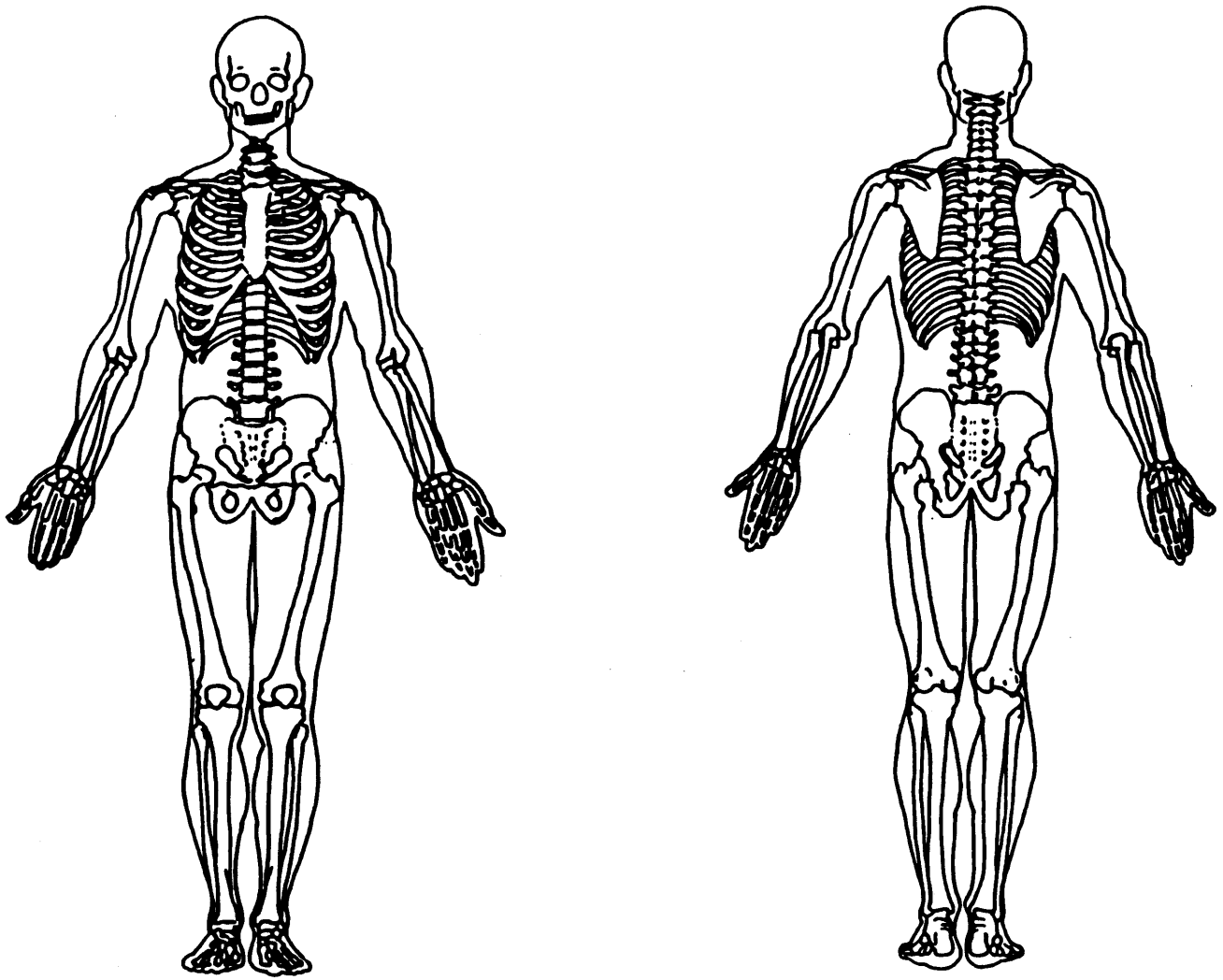
Arterial Blood Gases

pH = __.__

PO_2 = ____

PCO_2 ____

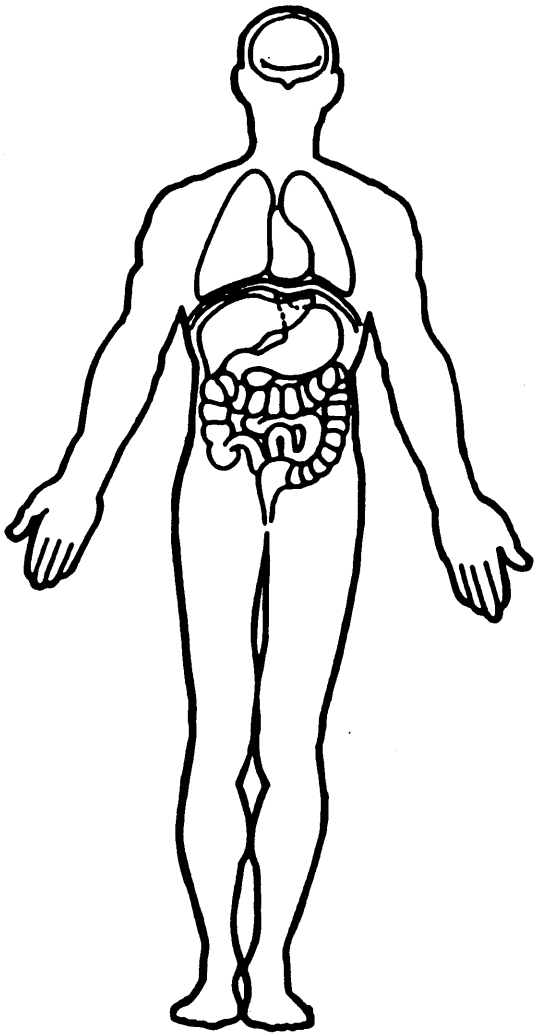
HCO_3 ____

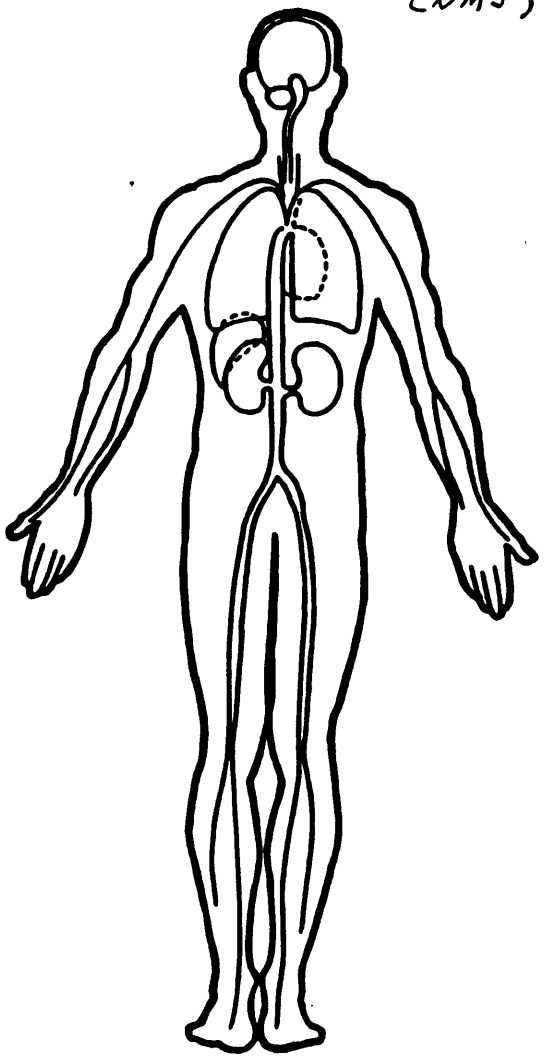


OFFICIAL INJURY DATA —INTERNAL INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

. Not knocked unconscious (NMJ)





5:30 [illegible] Called by Dr [redacted] at home - Came to office, complains of pain [illegible] Slid into ditch in [illegible] seat belt on & hit rain bag on country road

6:00 pm [illegible] FOLLOW UP RECORD

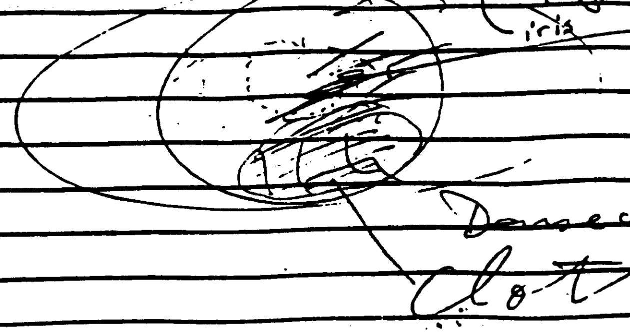
Referral from Dr [redacted] - Pt in auto accident & air bag hit left eye

[redacted] / 93

diffuse blood with faint view of iris

extensive abrasion of cornea

VscLP OS



2+ AC cells

Dense clot

dense clot

Clot

Imp: 1) Acute traumatic hyphema OS

2) Corneal abrasion OS

1) Strict bedrest at home. No activity except BR. Elevate head of bed

2) Eye patch, Atropine + polytrim in office + Fox shield

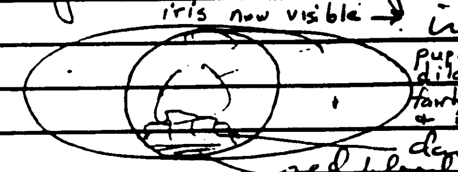
3) Extensive counseling on seriousness of injury, need for follow up carefully, possible need for hospitalization if rebleeding occurs, etc

4) Recheck 10:30 in am unless ↑ pain sooner

[redacted] 93 10:50 am moderate pain last night but tolerable.

VscHM 1 ft

iris now visible



pupil dilated fairly well + normal

2+ cells in AC [illegible]

abrasion healing

dark clot

red blood

Imp: 1) Acute hyphema OS - slightly improved

2) Corneal abrasion OS - healing

1) Atropine, tobrex oint + polytrim + pressure patch

2) Counselled re: bedrest - wear elastic stockings since had blood clot in leg last year - only [illegible]

3) Recheck in am

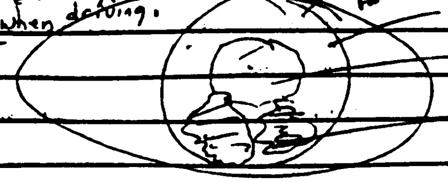
FOLLOW UP RECORD

slight ↑ pain this OS
pain this a.m.
and increase when driving.

[redacted] /93 increase when driving.

Vsc HM 1ft

Iris better visualized superiorly
Diffuse SPK
No fresh blood
Clots



Fluorescein negative
too tender for fundus

1) Atropine, poly/tram, Tobrex & patch
2) will go to dr. tomorrow
still corneal healing & ↑ pain today
3) RTC 11:20 am

Imp: 1) Resolving hyphema OS
2) Corneal abrasions healing
3) Prob 2° glaucoma OS

[redacted] /93 No ↑ pain

Vsc CF 1ft

Still diffuse
bleeding
clots

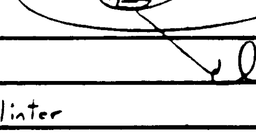
1) Same design as above
2) Next meeting
slight ↑ in activity level

Imp: 1) Resolving hyphema OS
2) Resolving 2° glaucoma OS #1

Less pain OS.

[redacted] /93 Was wearing 3pt seat belt, 1991 LTD, slid into ditch at 40 MPH

Vsc CF 3ft



Cornea clear
clot

Still wearing photosplinter

Med. Fine - repatch & poly, tram & atropine

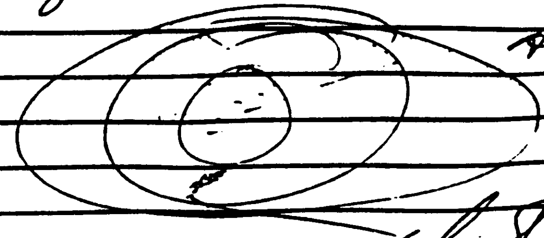
Imp: Resolving hyphema OS
Traumatic iritis OS
UJ

FOLLOW UP RECORD

Was not wearing glasses — not wearing glasses

[redacted]/93 Lunch ...

Vcc 20/200



?anterior lens
ant lens
density — density

clot resolved — clot resolved

(picture ... ?)

1) rest
2) continued rest

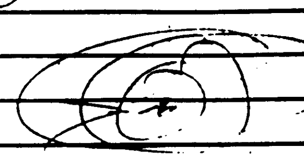
Imp: 1 Resolving hyphema OS — Resolving hyphema

[redacted]/93 Eye much better — eye much better

Vcc 20/80 +0.75

TAP 14

ant lens stain ? — ?anterior lens



poss ? pigment cells — poss ? pigment cells

dilated

Fundi benign? — Fundi benign?

Imp: 1 Traumatic iridoplegia — Traumatic iridoplegia
2 Resolved hyphema OS — Resolved hyphema

1) rest 2 weeks
2) DC shield - eyeglasses

See Back

[redacted]/93 slight ↑ vision ? ? ? light — slight ↑ vision ... halos around light

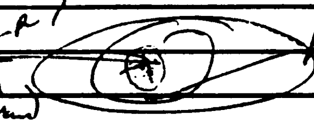
↓ clarity

Vcc 20/50 +1.50

2+ anterior lens opacity — lens opacity

1+ cells ↑ (? ...)

pigment — pigments



rest 1 month

2+ anterior lens opacity

FOLLOW UP RECORD

[redacted]93 Sent copies of office visits from [redacted]/93 thru [redacted]93 to [redacted] Ins. [redacted] as requested along c̄ copy of itemized bill. [redacted]

See Back

1 month post ?

[redacted]93 1 month post op. [illegible]

Fidelity [illegible]

Tapp - 17

Imp: 1) Traumatic iridoplegia OS
Traumatic iridoplegia

2) Traumatic cataract
Traumatic cataract

Traumatic iritis OS

3) Traumatic iritis OS

Past? hyphema

4) Past Hyphema OS

① [illegible]

② Flarex [illegible]

≈ 2 months post ?

≈ 2 months post op. ? slight still slight

anterior lens opacity

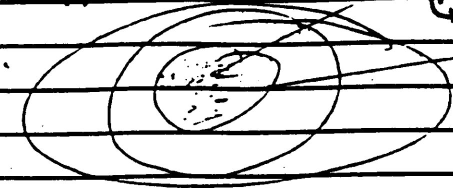
1+ anterior lens opacity

appears to extend to cortex ?

[redacted]/93 - 0.50

Vcc 20/50

20/ +1.50+0.75x10



iris sphincter tear

irregularity

Tapp - 15 OS

Fundi (undilated)

Fundi - (undilated) [illegible] debris

0.2 (lots of vitreous debris)

Lots of vitreous debris

1) Continue Flarex [illegible] until gone

2) [illegible] change glasses [illegible] vision

Traumatic iridoplegia

Imp: 1) Traumatic iridoplegia resolving OS

resolving

2) Anisocoria 2° to iris sphincter tear OS

3) Vitreous opacities 2° hyphema OS

hyphema

4) minimal anterior cortical traumatic cataract

traumatic cataract

FOLLOW UP RECORD

3 Months 3 months

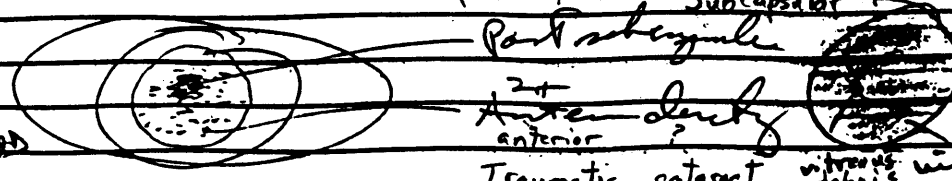
[redacted] /93 About the same - no pain — the same no pain
pants del

V 20/25-2 +2.25 +0.75 X180
cc 20/50

TAPP-18

(+ posterior subcapsular
Post subcapsular

S L



pupil still larger than (R) — pupil still larger than (R)

2+ Anterior density — anterior ?

Traumatic cataract — vitreous with debris

Imp. 1) Traumatic cataract OS
2) Traumatic iridoplegia — traumatic iridoplegia

1) Will see 4 months
approval for article given (read to pt) — approval for article given (read to patient)

[redacted] No Show - 4 mo V [redacted]

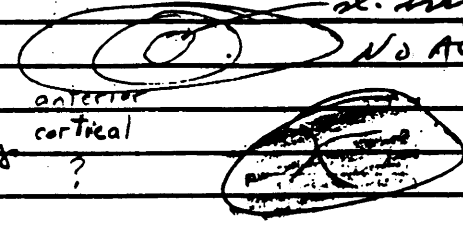
[redacted]-93 Rescheduled 4mo. V for [redacted] 1993
MS

[redacted] /93 Sharp post injury OS

20/20 -0.50
Vcc 20/200 NI

TAPP-17
sl. irreg. pupil
No AC Rxn
angle/c

S.L.



3+ anterior cortical — anterior cortical
2+ PSC ?

Imp. 1) Traumatic cataract OS progressing — Traumatic cataract, progressing

1) Will need ECCE c IOL in Dec
2) Will examine again on ultrasound day before surgery — will examine again on ultrasound day before surgery

[redacted]-93 Pt. in for K's and ultrasound.
MS-

[redacted]-93 Reserved c̄ [redacted] @ [redacted] the following lens powers:
+20.50 Posterior Chamber Lens and a +17.0 Multiflex Anterior for back-up.

FOLLOW UP RECORD

[redacted]93 Pt. is scheduled for an out-pt [redacted] ē [redacted] of the O.S. at [redacted] on [redacted] m. Admission time is [redacted] that morning. [redacted] with M.D. anesthesia, 2 nurse scrubs & the operating microscope were reserved with [redacted] @ the Surgery Desk. Reservations were made ē [redacted] @ the Care Office. I have set up her Ultrasound for [redacted] & Dr. [redacted] would also like to see her on that day. Since this cataract was caused by her car accident - her auto insurance should be covering all the bills.
CMA

[redacted]93 Pt has contacted her auto insurance & they assure her the surgery would be covered & no 2nd opinion would be necessary. She will pursue getting a written statement from them. She also has checked into her [redacted] health ins. & they say they would cover the surgery also. I sent her an out-pt info packet ē instructions & reminded her she needed to schedule ē Dr. [redacted] for a pre-op physical. CMA

[redacted]/93 3+ Ant cortical [illegible]

Vcc 20/[illegible] [illegible]

Mature? cataract OS

Verbal OK for patient to discuss case with Washington investigator for eye?
[illegible]

Progressive
progressing

? article given to patient

+20.50/+17.0

[redacted]93 Lens reservations on opposite side. MS

[redacted]93 SCCE OS ē +20.50/[illegible]

MODEL: MC50BD
POWER: 20.5
LENGTH (dT): 13.5mm
SER NO: [redacted]
UV
B PCL

[redacted]93 Sent [redacted] a super bill for surgical chgs. to be processed. [illegible]

FOLLOW UP RECORD

[redacted] /93 P.O.D. # 1

Vcc 20/200-1 S.L. Good / Ok

Pseudophakia?

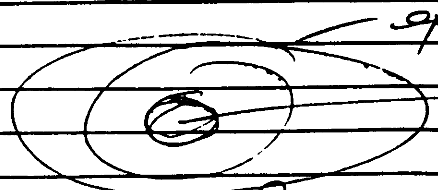
Imp: Pseudophakia OS

[redacted] /93

Foreign Body sensation? OS

Vcc 20/200 -0.75 +2.50 x 75 ?

suture



Good / Ok

final look

Pseudophakia?

Imp: Pseudophakia OS

corneal

suture OS

11 days post operation

[redacted] /93

11 days post op. No FB sensation

No foreign body sensation?

Vcc 20/200 -0.75 +2.00 x 90

S.L. Pupil ? & normal

Pseudophakia?

Imp: Pseudophakia OS

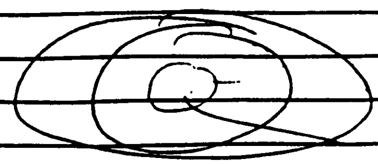
FOLLOW UP RECORD

≈ 3 weeks post operation

[redacted] /93 ≈ 3 weeks post IOL OS

V cc 20/200 +1 −1.50 +1.50 × 60°

S.L.



TAN slightly enlarged

SP. enlarged

1+ fibrosis

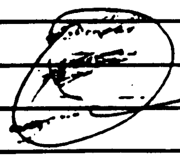
Pseudophakia ?

1. Pseudophakia OS

Possible ?

2. Possible macular edema ?

W/ ...



Some ? ?

Some iris tags

but chamber looks ok ?

Permission OKed for release of information to Indiana

1. Permission OK'd for release of information to Indiana

2. Ret. 3 weeks – may need fluorescein if no ↑ in vision

1. Voltaren PO

may need fluor ? escence if no ↑ in vision

HISTORY AND PHYSICAL EXAMINATION

PATIENT : [redacted]
PHYSICIAN: [redacted] M.D.
ADMISSION: [redacted]/93

CHIEF COMPLAINT:
Poor vision in the left eye.

HISTORY OF PRESENT ILLNESS:
This 61 year old lady received a traumatic injury from an automobile airbag in an accident [redacted]/93. I had seen her in 1991, at which time she had corrected visual acuities of 20/20, normal pressures and no particular problems. After this injury, she received an acute hyphema, corneal abrasion, vitreous hemorrhage and vision declined to light perception. Over subsequent weeks, the vision did return to 20/50 on [redacted]/93. At that point and time the hyphema had cleared, the acute injury had basically cleared except for anisocoria secondary to an iris sphincter tear and traumatic iridoplegia on the left. The lens was beginning to develop an opacity with 1+ anterior cortical changes noted. These subsequently increased with posterior subcapsular changes as well as the mild nuclear sclerotic and significant cortical changes. Over subsequent months the vision has declined; by [redacted]/93, to 20/200. Because of the traumatic cataract I graded the anterior cortical changes as 3+ on 8/24, as well as 3+ posterior subcapsular changes. By [redacted]/93,. vision had declined to 20/400 and the cataract is beginning to mature. Applanation pressures have remained at 16 and 17 level. On several dilated exams, other than some inferior vitreous debris, I did not note anything and, therefore, feel as though the retina is probably in good shape, although there is still some element of uncertainty as to that until a good view of the retina can be obtained with the cataract removed. The patient understands the risks and benefit and wishes to see better. Her right eye was never injured and remains a 20/20 normal eye. The remainder of the history and physical will be deferred since there will be one attached from her medical doctor.

DIAGNOSTIC IMPRESSION:
1) Traumatic cataract left eye.
2) Traumatic iridoplegia left eye.

RECOMMENDATION:
Proceed with the surgery as outlined above with a plus 20.50 posterior chamber lens used and a plus 17 backup anterior chamber lens.

[redacted] M.D./[redacted]
D: [redacted]/93 [redacted].
T: [redacted]/93 [redacted].

Post-Crash Day Calculations

Date of Accident: [redacted] 1993

Eye Specialist Medical Records Month	Day	Year	Serial Date	Days Post-Crash
1	8	93	33,977	0
1	9	93	33,978	1
1	10	93	33,979	2
1	11	93	33,980	3
1	13	93	33,982	5
1	15	93	33,984	7
1	22	93	33,991	14
2	5	93	34,005	28
3	4	93	34,032	55
4	14	93	34,073	96
8	13	93	34,194	217
8	16	93	34,197	220
8	24	93	34,205	228
8	25	93	34,206	229
9	20	93	34,232	255
10	25	93	34,267	290
10	26	93	34,268	291
11	1	93	34,274	297
11	2	93	34,275	298
11	4	93	34,277	300
11	5	93	34,278	301
11	8	93	34,281	304
11	15	93	34,288	311
11	29	93	34,302	325

SURGEON'S OPERATIVE RECORD

PATIENT:
SURGEON: M.D
ASSISTANT:
DATE: [redacted]93

PREOP DX: Traumatic cataract, left eye.
POSTOP DX: 1. Traumatic cataract, left eye.
2. Posterior synechiae, left eye, and traumatic iridodialysis, left eye.
OPERATION: Extracapsular cataract extraction, left eye, with implantation of a +20.50 diopter power, BPCL posterior chamber intraocular lens by [redacted]

With the patient being sedated and monitored by anesthesia, with excellent cooperation and not problems, systemically, a retrobulbar injection totaled 3 cc, and a bolus at the lateral canthus of the left eye, total 5 cc, of 2% Carbocaine, 0.75% Marcaine, Epinephrine 1:100,000 and Wydase. The wet-field cautery insured hemostasis after a limbal peritomy was done superiorly. A superior rectus suture was used to manipulate the eye, but basically, the exposure was good throughout. Once the operating microscope and maximum magnification could be used, it was obvious that there was a rather large area of adhesions of the superior iris to the anterior lens capsule. This extended from about 11 o'clock, around to about 2:30 o'clock. The iris pigment was absent from the leaf of the superior iris and once the anterior chamber was opened, it was obvious that there was a very peripheral iris. iridodialysis, which was basically like a peripheral iridectomy. After the anterior chamber had been entered, then the Healon cannula, and the BSS cannula were used to free the iris adhesions so that the pupil was then able to move again. Some iris pigment was left on the anterior lens capsule, and this was irrigated out with balanced salt solution. Underneath Healon, a bent 25 gauge needle cystotome fashioned a 360 degree anterior capsulotomy, in the can opener fashion. The wound was then opened to 170 degrees with the right and left corneoscleral scissors, and again, more Healon was placed into the anterior chamber to maintain its configuration since the iris did want to prolapse at 12 o'clock. The preplaced 7-0 silk sutures were looped free of the wound at 10 and 2 o'clock, and the nucleus was then expressed from the capsular bag using the Nichi nucleus expressor. The preplaced sutures were tied, as was the 12 o'clock suture, and the McIntyre aspiration unit was used for a complete cortical clean up. The cortex was rather thin and wispy, and there was not too much cortex left. The clear, intact, capsular bag resulted, and no posterior vacuuming was done, since visibility of the posterior capsule was difficult because of its clarity. The bag was reinflated with Healon. A Sheets glide was positioned into the bag. The lens was picked up with the Shepard forceps, slipped into the bag, underneath the glide, and as the glide was removed, manipulation with the Graether collar button was successful in placing the lens totally within the capsular bag. It was rotated to a 3 and 9 o'clock position. Because there was some fear with the trauma to the superior iris, that the superior

CONTINUED ON PAGE TWO

zonules may have been weakened. The lens remained well centered throughout closure. Miochol tried to constrict the pupil. It remained about 6 mm dilated. Some of the Healon was irrigated out with balanced salt solution. Some of the Healon was left behind, since there was a tendency for iris prolapse at 12 o'clock. Closure was accomplished with 7 interrupted 10-0 nylon sutures, cut short and pulled up onto the conjunctival hood. The retina was protected, at all times, with the occluder, after the cataract had been removed, because of the possibility of preexisting retinal damage. The sutures were cut very short and pulled up onto the conjunctival hood. Maxitrol and Betoptic S drops were applied, as was an eye patch and Fox shield, and the patient was sent to her room in good condition.

[redacted] M.D./[redacted]
D:[redacted]
T:[redacted]

Appendix G:

Nebraska Medical Journal Article

ORIGINAL ARTICLES

Automobile Air Bag Eye Injuries

AUTOMOBILE air bags decrease the incidence of severe head trauma and penetrating ocular injuries caused by accidents.[1] The bags are an obvious improvement in consumer safety. However, since use of the air bag has become more common, reports of blunt ocular trauma caused by air bags have been increasing in frequency.[2,3,4,5] This is a case report describing typical ocular injuries associated with the use of these safety devices.

CASE REPORT

A 60 year old woman was driving a 1991 Ford LTD at 40 mph when she slid into a ditch on a gravel road. She was wearing a three-point lap-shoulder belt at the time and was not wearing glasses. Her air bag immediately inflated and the car did not overturn. The passenger compartment remained intact and although the car sustained considerable front end damage, the driver was not knocked unconscious.

She did note pain and decreased vision in her left eye which was struck by the canvas air bag. She was examined by her family physician later in the afternoon and referred for ophthalmological consultation when he noted the presence of a hyphema in her left eye.

Examination of her left eye at the slit lamp approximately four hours after the accident revealed a dense hyphema of the left eye with a clot occupying the lower half of the anterior chamber. The pupil was faintly visible through the diffuse red blood cells floating in the upper half of the chamber. Her visual acuity was light perception. She also had a large corneal abrasion, subconjunctival hemorrhage and numerous periorbital contusions and lid abrasions around the left eye. Her right eye was uninjured.

Resolving periorbital contusions, lid ecchymosis, subconjunctival hemorrhage and traumatic iridoplegia four weeks after auto accident with air bag deployment.

She was treated as an outpatient with strict bed rest, cycloplegic drops, and pressure patching. Her abrasion and hyphema cleared over the next week and vision improved to 20/200. Intraocular pressures remained normal over three months of subsequent followup exams. Her retina did not suffer damage although residual vitreous debris may represent a small vitreous hemorrhage.

A rupture of the iris sphincter resulted in a permanently irregular pupil. A small traumatic anterior cortical cataract developed and her best corrected visual acuity three months after the accident was 20/50.

SUMMARY

Until improvements in the design of air bags have minimized the risk of serious ocular trauma, practitioners must be alert to the possibility of severe eye damage any time the device is activated. Prompt ophthalmological referral and prompt treatment of any ocular injury can result in a lower incidence of permanent visual loss.

REFERENCES