



U.S. Department of Transportation

National Highway Traffic Safety Administration

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NATIONAL CAPITOL SYSTEMS, INC.

LEVEL 1 AIRBAG INVESTIGATION REMOTE CASE NO. 90-07
ARKANSAS

Prepared for:

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

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

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

NCSI LEVEL 1 AIRBAG REPORT

Case No. 90-07

Summary

This report is a vehicle accident study of a 1988 Mercury Topaz equipped with a supplemental airbag system involved in a collision with a 1988 Ford pickup. The accident occurred on 1990 at approximately that hours. The location of the accident site is at the intersection of the Road) and the Street in the Road. Arkansas.

The 1988 Mercury Topaz was traveling north on Road in the right lane of the five lane roadway. The driver stated she was proceeding at approximately 40 miles per hour as she approached the intersection with Street. A 1988 Ford pickup was westbound on and was stopped at the intersection. The pickup attempted a left turn to travel south on Road. The front of the Topaz struck the left side of the pickup.

Following impact the Topaz rotated slightly counter-clockwise and came to its final rest position in the intersection. The Topaz was still headed north at final rest. The Ford pickup rotated counter-clockwise following impact and came to rest headed south in the intersection. A wrecker was called to the scene to tow away the Topaz due to disabling damage. The pickup was functional and was driven away.

Damage to the Topaz was distributed across the frontal plane with direct or induced damage to the entire frontal cap. The damage was repaired at a cost of \$5800.00. The frontal impact resulted in sufficient velocity change to deploy the airbag module in the Mercury Topaz.

The driver of the Topaz was not wearing her three-point lap and shoulder belt when the accident occurred. She stated that on impact with the pickup her forehead struck the windshield resulting in a minor abrasion. The windshield was not cracked by this occupant contact. She also sustained a contusion to her chest from contact with the steering wheel and a contusion to her neck from the steering wheel. The driver stated that in opinion the airbag did not operate properly. She said the airbag did not deploy until after she struck the windshield and steering She also said it did not completely inflate and was only wheel. size of a basketball when it did inflate. She also complained about the smoke and smell from the airbag's delayed deployment. She stated the car filled with smoke and she was afraid it was going to explode.

The driver of the Topaz was transported by ambulance to a local hospital where she was treated for her injuries and released.

NCSI LEVEL 1 AIRBAG REPORT

FLEET - Private Owner

LOCATION - Arkansas

CASE NO. - 90-07

ACCIDENT DATA

Location/Street: Intersection of and and

Street

City/Township: Arkansas

County:

Area/Type: Urban/Residential

Accident Date/Time: 1990, hours

Investigating Police Agency: Police Department

Accident Type: Car/Pickup, Angle impact

Airbag Vehicle

Occupant Injury Severity: Minor (AIS-1)

AMBIENCE

Light Conditions: Dark

Weather: No Adverse Conditions

Precipitation: None

Road Surface: Dry

ROADWAY

Location:

Airbag Vehicle

Vehicle #2

Number of Lanes: Five Two

Surface: Asphalt Asphalt

Vertical Alignment: Level Level

Horizontal Alignment: Straight Straight

Speed Limit: 40 mph 30 mph

Traffic Controls: None Stop Sign

VEHICLES

Airbag Vehicle

Vehicle #2

Year:

1989

1988

Make:

Mercury

Ford

Model:

Topaz GS

Ranger

Body Style:

Four door

Super cab

V.I.N.:

1MECM36X5JK

Mileage:

Unknown

Securiflex Windshield:

Unknown

Windshield Damage/Source:

None

Fleet:

Tow Status:

Private Owner

Towed due to damage

Driven

Reported Defects:

None

Previous Defects:

None

VEHICLE DAMAGE

Deployment Impact

Object Struck:

Vehicle #2

Event Number:

Accident Sequence

Damage Location:

Event Number:

Front

Left side

CDC:

01-FDEW-99

Damaged Components:

Front bumper, grille, hood, radiator, left and right front fenders,

etc.

Repair Estimate:

\$5800.00

Interior Damage:

Deployed airbag module

COLLISION SEQUENCE

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DRIVER DATA

Airbag Vehicle

Age: 31

Sex: Female

Height: 65 inches

Weight: 127 pounds

Posture: Normal

Ejected: No

Entrapped: No

Active Restraint

System Usage: None

Usage Source: Police Accident Report

and interview

Eyeglasses: None worn

Vehicle Familiarity: Daily

Route Familiarity: Daily

Trip Plan: Going home

Manner of Leaving Scene: Ambulance

Type of Medical Treatment: Emergency Room

DRIVER INJURIES

Injury Description	<u>Severity</u>	Source		
Abrasion Forehead	Minor (AIS-1)	Windshield		
Contusion Chest	Minor (AIS-1)	Steering Wheel		
Contusion Neck	Minor (AIS-1)	Steering Wheel		

Injury Coding

I.S.S. Body Region	O.I.C. Body Region	Aspect	Lesion	System Organ	A.I.S. Severity	Injury Source
6	F	S	A	I	1	01
6	С	W	C	I	1	04
6	N	A	С	I	1	04

DRIVER DATA

Vehicle #2

Age: 25

Sex: Male

Ejected: No

Entrapped: No

Active Restraint

System Usage: Lap and Shoulder Belt

Usage Source: Police Accident Report

Type of Medical Treatment: None

OCCUPANT INJURIES

Injury Description

No Injury

Injury Coding

O.I.C. I.S.S. System Body Body A.I.S. Injury Region Region Organ Aspect Region Severity Source 0 0 0 0 0 0 0

<u>ATTACHMENTS</u>

Police Accident Report

			MOTOR VEHICE	E INAFFIL ACCIDE	NI NEFUNI	т		1		<u> </u>	<u> </u>
		ncident # Unit Assigned	Premises	Geo. Code	District		1. 🗆	Fatal I	njury	/Injury (
	f			The Control of the Co			3. 🕿	Nonin	capaci	ig Injury Itating Inj	
ļ ´			City					Possit Prope		ury mage on	ly
İ	li	Not in City, but Distance Distance N S E W	m nearest city limit			[Date	4	7.	9	20
L	: 11	Road/Street of						Mon	th	Day Y	'ear
Č	1	Accident Occurrence If on numbered Hig	hway/County Road, give	, , , , , , , , , , , , , , , , , , ,	ection Log Mile		Day	of Wee			_
Î	1	At its intersection with					Time				_
ó		Give # h	lighway, County Road, Na	me of City Street as applicable		ŀ			M	PM	
N	1	Special Reference Not at intersection, but Distance N S E W				}	No.	Vehicle	s invo	lved <u>s</u>	
	ľ	Distance N S E W	nactica Highway Co	Reference Point		:					
l		Use only the following as Reference Points) Inters Bridge, Railroad Crossing, Overpass, Underpass, M	ilepost, State Line, (County Line, City Limit	HIT & RUN 🗆 YES 🐒	NO					
	+				and the second s				-	osition	
		Vehicle SR FORD PK Year Make Model Body Style	Reg. Year State	Vin # LF	TCVIATY		11 -	Nono Front Front	Seal L.	S.	
١.,	.	Owner -	Addres	S A		, <u> </u>	13 - 19 -	- Front - Front	Seat R. Seat No	S. ot Known	
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l C	: :	Frailers B No	2	Plate #	Cargo 🗆 Hazardou	s · 🤻	33 39	— Third — Third — Third	Seat R. Seat No	.S. ot Known	
E	1	Prior Vehicle Damage Nove Notes	Reg. State.	Plate #		uous	42	Fourt	h Seal i h Seal (S . C.	
1	- 1	Vahiala Damaga as result of Accident					49	Fourt Fourt Sieen	h Seat I	Not Known	Truck
1	١	🗆 Disabled 🖶 Functional 🗀 Other Damage 🗀 No	Damage Investig	ator's Estimated Cost to	Repair \$ 1000.00		50 — Sleeper Section Cab of Truck 51 — Open Bed of Truck 52 — In Trailing Unit 53 — Riding on Veh. Exterior				
	ı	☐ Driven away ☐ Towed away By		To			53 99	Not h	g on ve (nown	n. Exterior	
\vdash	十			A particular and a second and a							
] 9		Operator		_Address							
F	E	Type License: Chauffeur □ Operator 🍲 Cyclis	st 🗆 School Bus i	☐ Learner Permit ☐	Court Permit □ Restrict			No Li			
F	۱ ۱	BAC Test: Yes Results If Known	N	ot Tested Refused	Test 🗆	Race	Sex	Age	lnj.	Seat 2.7	Resi
1	۱.	Operator Residence: Local Elsewhere in St	ate 🗆 Nonreside	nt of State □ Reside	HICE MOLIVINOMII			25		111	0
19	١٥	Operator License #	State Operat	or Data DOB							
10	C	Name				\neg			丁		T
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١,	,	Name	Address						T		T
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Γ		Vehicle 88 Merc Top 4DC	Reg. 90	₹ Vin # La	mec m36xsJk					traint Syst ر	tem
١,	٧l	Year Make Model Body Style	Year State	Number	AP] i i	None Shoul Lap E	ider Belt		
	E H	Owner	Addre	SS .	/45		3	— Lap 8 — Child	Should Safety	Seat	
		□ Rented to □ Leased to □ Lea	Addre	SS		1	6	Motor	oved Air	leimet Bag d Air Bag	
11	L E				☐ Not Knov		8 U	Restra	aint Use	d — Type	
1	,	Trailers 🖶 No 🗆 Yes # Units	Reg. State.	Plate #				Unkn	OWN		
1	۱	Prior Vehicle Damage	Vehicl	e Defects None N	4370				Ejec	tion:	
	0 T	Vehicle Damage as result of Accident	la Damasa - Issassia	entor's Estimated Cost to	Renair \$ 2500.00		Į ,	Not E Totall Partia	jected ly Electe	:d	
	- 1	Vehicle Damage as result of Accident ■ Disabled □ Functional □ Other Damage □ N □ Driven away ■ Towed away By □	o Damage Investig	ator 5 Estimated Cost to	/ -		9	— Partia — Unkn	illy Ejec own	led	
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Γ	_		<u>. </u>	Address		1-C.	A	e			
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	R	Type License: Chauffeur □ Operator ■ Cycl		□ Learner Permit □ lot Tested ■ Refused	Toet	/IEU					<u>بر</u>
	2	BAC Test: Yes Results If Known Operator Residence: Local Elsewhere in St			ence Not Known 🗆	Race	Sex	Age	Inj.	Seat E	2
	P	Operator License		tor Data DOB	· [\mathcal{C}	F	3)	3	11 0	
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- 1 '	1	INGIIIG									-

Veh 1, Damage None Overturned Burned Submerged Unknown Color Solor Body Style	☐ Head On ☐ Rear End ☐ Rear End ☐ Sideswipe ☐ Sideswipe ☐ Rear End ☐ Rear En	Overturn Overturn Backing Overturn	Veh 2, Damage None Overturned Burned Submerged Top U.Carriage Unknown Color Black Body Style	Δ
Point of Initial Contact Left Sile		→ Olici	Point of Initial ContactFa	100T
INVESTIGATOR DESCRIPTION: (Refer t	to vehicle by operator)			
operator of vehicle	#1 State Q that	he was	Stopped at	the
Stop Sign at	He said	he lookel	O left, Right	
then left again	and d. l not		The second secon	SlateD
he then attempted	1	left our		306 S
and was steuck	by vahicle #	<i>9</i>		
operator of uchica	10 th 1 Sci1 5	La sau	Vehicle #1 St	In one O
at the Stop sig	u and he	then pulled	2 DUT in fa	ons of
her and she w			bee colliding	
vahicle # (.				
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			· ·	Indicate North, Use
DIAGRAM: (If space adequate)				Arrow
Arrest:	Charge (A)		Summon	
Arrest:	Charge NO	_		
Time notified of accident	Time arrived _	rmation available to me	Date Photos	<u>ි ඉට</u> □ Yes 8 No
The data in this report reflects my best indeems Investigator:	H Allu Kilowieuge baseu ofi INTO	imation available to me	. Pilotos	1 Yes 1 No
HIVESUDZIOC A. CONTROL	and ID Number	San C	partment	Date Submitted

Within their jurisdiction and cooperatively in overlapping jube responsible for the investigation and reporting of all traffic actions are applied investigating office shall make the investigating office shall make the investigating of the shall make the investigation and the shall make the shal	ng of Motor Vehicle Traffic Accidents It is dictional situations, law enforcement officers of the same are declared to excidents and the deaths, injuries and property damage resulting therefrom. It is gation with all possible promptness and the investigating officer shall file the hin five (5) days subsequent to the actual investigation. (Acts 1967, No. 246.)
Page four may be used when additional space is required to	complete the Accident Report.
NOTE: NOT Drawn to Scale Final Resting Position 9: stop Sign N = North	
	-
	REST AVAILABLE COPY

Atmospheric Conditions	Traffic Controls	Fire Occurrence
0 No Adverse Conditions	0 □ No Controls Present	No Fire Occurrence
1□ Rain 2□ Sleet	1 ☐ Flashing Beacon 2 ☐ Traffic Signal	V1 1 ☐ Fire Occurrence, Result of Impact V2 2 ☐ Fire Occurrence, Result of Impact
3□ Snow 4 □ Fog 5□ High Winds Temperature	3 ∰ Stop Sign 4 □ Yield Sign	A Committee of the Comm
6□ Smoke 7□ Smog 8□ Dust	5 □ RR Crossing with Gates & Lights	First Harmful Event
9 Other	6 ☐ RR Crossing, Flashing Lights Only	Non-Collision Collision With 10 □ Overturn 1 □ Pedestrian
10 □ Not Known	7 □ RR Crossing, Crossbuck Only	10 □ Overturn
Light Conditions	8 □ School Zone, Children Present	13 Immersion 3 Railway Train
1 □ Daylight 2 🗯 Dark 3 □ Dawn 4 □ Dusk		14 Gas Inhalation 4 MV in Transport
5 □ Dark but lighted	10 R Lane Markings 11 O Other Controls	15 ☐ Fell from Vehicle 5 ☐ MV in Other Roadway
6□ Dark, light not functioning	12 Controls Not Known	16 ☐ Injured in Vehicle 6 ☐ Parked Motor Vehicle
7 □ Not Known Accident Locale	13 Device Not Functioning	17 □ Other Non-Collision 7 □ Animal
1 □ Rural 2 😭 Urban	14 B Device Functioning Properly	8 Collision with Fixed Chicat
3□ Not Known	15 Device Functioning Improperly	Collision with Fixed Object
Roadway Surface Condition		20 Identify Object
1 Dry 2 Wet 3 □ Ice	Vehicle Travel Direction	
4□ Sand 5□ Dirt 6□ Oil	V1	First Harmful Event Occurred
7 Other		1
8 □ Not Known Road System		2 □ Shoulder 3 □ Median 4 □ Roadside 5 □ Outside Trafficway
1 ./ 2	Vehicle Action Vision Obscurement	6 □ Location Unknown
Opeca Little rostea ros	V1 V2 V1 V2	
1 ☐ Interstate 2 ② U.S. Hwy. 3 ☐ State Hwy.	1 ☐ Going Straight ■ 0 😭 Vision not obscured 🕏	Most Harmful Event
4 □ County Road 5 □ City Street 6 □ Other	2 Negotiating Curve	VI Callisian W/mv is TECKS pact
Road Surface Type	3 ☐ Slowing ☐ 2 ☐ Snow ☐ 4 ☐ Stopped in Traffic Lane ☐ 3 ☐ Sleet ☐	Identify Event
1 □ Concrete 2 ■ Asphalt	5 Merging	1 A 11
3 □ Gravel 4 □ Dirt	6 □ Enter, Parked Position □ 5 □ Glare □	V1 Callisian V/mv is Teams pact Identify Event V2 Callisian V/mv is Transport
5 Other	2 Negotiating Curve	Identify Event
6□ Not Known	8 Parked 7 Headlights	Pedestrian Location
Roadway Alignment/Profile	9 ☐ Turning Right ☐ → 8 ☐ Building ☐	1 ☐ In Crosswalk 6 ☐ No Crosswalk
1 ■ Straight 1 ■ Level 2 □ Curve 2 □ Grade	10 Turning Right on Red 9 Billboard	2 Intersection 7 Non-Intersection
3 Not Known 3 Hillcrest	11 MaTurning Left 10 Trees	3 □ On Roadway 8 □ Sidewalk 4 □ On Road Shoulder 9 □ Location Not Known
4 □ Sag	12 Turning Left on Red 11 Shrubs 13 Making U Turn 12 Other Vegetation	5 Bike Path 10 S No Pedestrian
5 ☐ Not Known	14 Backing 13 Moving Vehicle	1
Construction/Maintenance Zone	15 □ Avoiding Vehicle □ 14 □ Parked Vehicle □	11 🗆 Other Location
1 ☐ Yes 2 No	16 □ Avoiding Pedestrian □ 15 □ Ice on Windshield □	0 □ Not Visible Pedestrian Action
3□ Highway Const 4□ Utility 5□ Other	17 □ Avoiding Animal □ 16 □ Fog on Windshield □	1 Crossing Road, No Intersection
Protected 6 □ No 7 □ Yes How 8 □ Reduced Road Width	18 Avoiding Other Object 17 Broken Windshield	2 Crossing at Intersection
9□ Road Repair 10 □ Maintenance	19 Passing 18 Dirty Windshield 20 Changing Lanes 19 Other	3 ☐ Walking with Traffic
Trafficway Flow	20 Changing Lanes	4 □ Walking Against Traffic
	22 Action Not Known	5 ☐ Playing 6 ☐ Lying in Roadway
1 □ Divided 2 ♠ Not Divided ♣ Lanes # Lanes		7 ☐ Working 8 ☐ Standing in Roadway
4□ Divided by Other Barrier	OPR 1 OPR 2 Contributing Factors	9 No Pedestrian
5 Divided by Temporary Barrier	0 □ ■ No Contributing Factor	10 Other Ped. Action
6 □ One Way Traffic	1 🗆 🗆 Too Fast For Conditions	ACROIT NOT KNOWN
7 □ Not Known	2 🔳 🗆 Fail to Yield	1000
Roadway Conditions	3 D Alcohol	EMS Time Notified 1922
0 No Adverse Conditions	4	EMS Time Arrived 1925
1 □ Obstruction, Warning 2 □ Obstruction, No Warning	6 Disregarded Sign	W Charles Comment
3 Loose Materials on Surface	7 D Disregarded Traffic Signal	Injured Transported to
4 ☐ Holes 5 ☐ Ruts 6 ☐ Bumps	8 D Wrong Side Road	
7 □ Defective Shoulders	9 🗆 Wrong Way — 1 Way Traffic	
8 D No Markings	10	Transported by Americance TRansport
9 Other Defects	11	
10 Defects Not Known Relation to Junction	13 🗆 🗆 Illegal Lane Change	
0 □ Non-Junction	14 🗆 🗆 Illegal Passing	
1 ≥ Intersection 2 □ Intersection Related	15 🗆 🗆 Prohibited U Turn	
3 □ Driveway 4 □ Alley	16 □ □ Operating Defective Lights	WOUGHNES CARRIED
5 ☐ Exit Lane 6 ☐ Entrance Lane	17 Operating Defective Brakes	INSURANCE CARRIER
7 🗆 RR Crossing	18 Operating Other Defective Equipment	V
8 Crossover Lane	19	
9 Other	20 Other Factor	VZ ECONOMY
10 Not Known		
Damage to Property		
Damage to Property Other Than Vehicle	Describe Property	1
Owner of Property Name	Address	Estimate of Damage
Notified of Damage Name	Address	Time Date
italie		
Witnesses Name	Address	Age Sex
11dille		
Witnesses	7,66,555	:
Witnesses Name	Address	Age Sex