



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

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

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

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*** *** ***



AUTO SAFETY HOTLINE
(800) 424-9393
Wash. D.C. Area 366-0123

FRANKLIN RESEARCH CENTER

Division of Arvin/Calspan
[REDACTED], New York [REDACTED]

FRC REMOTE AIR BAG DEPLOYMENT INVESTIGATION

CASE NO. 90-9

FLEET - 1990 MERCURY GRAND MARQUIS

LOCATION - [REDACTED], OH

ACCIDENT DATE - [REDACTED] 1990

Contract No. DTNH22-87-C-07169

Prepared for:

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

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TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 90-9		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle FRC Remote Air Bag Deployment Investigation Fleet - 1990 Mercury Grand Marquis Location - ██████████, OH				5. Report Date ██████████, 1990	
				6. Performing Organization Code	
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				14. Sponsoring Agency Code	
15. Supplementary Notes Remote investigation of an air bag deployment crash that involved a 1990 Mercury Grand Marquis. The driver and his passenger stated that the air bag deployed but did not inflate.					
16. Abstract This remote type investigative report focuses on a 1990 Mercury Grand Marquis that was involved in a front to side impact configuration with a 1988 Nissan Sentra. The impact force was of sufficient magnitude to deploy the Mercury's driver air bag system; however, the driver and right front passenger of the vehicle stated that the bag failed to inflate. They reported hearing a bang and noted a dust-like substance within the vehicle which is typical of an air bag deployment. The deployed air bag module was forwarded to NHTSA at the request of the COTR. The module will be forwarded to the manufacturer for analysis. The driver of the Grand Marquis sustained a small laceration of the right hand, a contusion of his left knee, and aggravation of a previous back and neck injury. His right front passenger sustained a fracture of the left ring finger and a small laceration of the left index finger from probable instrument panel contact.					
17. Key Words Frontal impact Air bag deployment Air bag module			18. Distribution Statement General Public		
19. Security Classif. (of this report) None		20. Security Classif. (of this page) None		21. No. of Pages 17	
				22. Price	

FRANKLIN REMOTE AIR BAG DEPLOYMENT INVESTIGATION

FRC CASE NO. 90-9

FLEET - 1990 MERCURY GRAND MARQUIS
LOCATION - ██████████, OHIO

SUMMARY

This crash occurred at an urban 3-leg intersection on ██████████, 1990, at 1445 hours. A 1990 Mercury Grand Marquis, equipped with a driver air bag system, was traveling in an easterly direction on an arterial roadway when a 1988 Nissan Sentra initiated a left turn across the Mercury's path of travel. The right frontal area of the Mercury impacted the left front fender area of the Nissan resulting in a 12 o'clock/10 o'clock impact configuration (Mercury's CDC = 12-FZEW-1). The impact resulted in a sufficient longitudinal deceleration to deploy the Mercury's driver air bag system.

The impact rotated the Nissan in a clockwise direction as the Mercury continued forward. The left rear area of the Nissan impacted the right C-pillar area of the Mercury resulting in minor sideslap damage.

The driver of the Mercury was a 62-year-old male, 70", 213 lbs. He was wearing the active 3-point lap and shoulder belt system. At impact he initiated a forward trajectory and loaded the active belt webbing. His loading force aggravated a previous back and neck injury (pain). The driver's left knee contacted the knee bolster which resulted in a contusion of the knee (AIS-1). He also sustained a small laceration of the right hand (AIS-1) from an unknown source.

The vehicle's right front passenger was a 64-year-old female, 68", 150 lbs. She was also wearing the active 3-point lap and shoulder belt system. At impact, the passenger moved forward and loaded the belt webbing. She probably attempted to brace against the upper instrument panel with her left hand. The passenger sustained a fracture of the left ring finger (AIS-1) and a small laceration of the left index finger (AIS-1).

As the Mercury came to rest, the right front occupant noted the air bag extending from the steering assembly. She stated to the driver that the bag had failed to inflate. The driver also noted the limp bag and agreed that it had failed to inflate. Both occupants heard a bang and noted a smoke-like substance within the vehicle. The driver also detected a foul odor which he identified as a gaseous odor.

The driver/owner contacted the NHTSA Auto Safety Hotline and reported the alleged air bag failure. He also shipped the deployed air bag and module assembly to FRC. The bag was fully deployed from the module and was intact with no tears or ruptures other than the 1" diameter venting ports located on the back side of the bag at the 3 and 9 o'clock positions.

The module assembly was forwarded to NHTSA where it will be shipped to the manufacturer for further (internal) evaluation.

FRANKLIN REMOTE AIR BAG DEPLOYMENT INVESTIGATION

FRC CASE NO. 90-9

FLEET - 1990 MERCURY GRAND MARQUIS
LOCATION - [REDACTED], OH
ACCIDENT DATE - [REDACTED], 1990

ACCIDENT DATA

Location/Street: 3-leg T intersection
City/Township: [REDACTED], OH
Area/Type: Urban/Residential
Accident Date/Time: [REDACTED], 1990, 1445 hours
Investigating Police Agency: [REDACTED] Police Dept.
Accident Type: Car/car, front to side impact configuration with subsequent side slap
Air Bag Vehicle Driver - Minor (AIS-1)
Occupant Injury Severity: Right Front Passenger - Minor (AIS-1)

AMBIENCE

Light Conditions: Daylight
Weather: Clear
Precipitation: None
Road Surface: Dry

HIGHWAY

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Location:	Minor arterial	Local street
Number of Lanes:	2	2
Surface:	Asphalt	Asphalt
Vertical Alignment:	Level	Level
Horizontal Alignment:	Straight	Straight

HIGHWAY (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Traffic Density:	Moderate	Moderate
Speed Limit:	35 mph	35 mph
Traffic Controls:	None	Stop sign

VEHICLES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Year:	1990	1988
Make:	Mercury	Nissan
Model:	Grand Marquis	Sentra
Body Style:	4 dr. sedan	
V.I.N.:	2MECM75E2LX (production number deleted)	
Mileage:	2,311	
Windshield Damage/ Source:	No damage	
Tow Status:	N/A, driven from scene	
Reported Defects:	Driver and his passenger claimed that the air bag deployed; however, it failed to inflate	
Previous Repairs:	None	

VEHICLE DAMAGEDeployment Impact

Object Struck:	Vehicle #2	
Event Number:	1	
Damage Location:	Right frontal area	Left front fender and door area
CDC:	12-FZEW-1	10-LYEW-3 (estimated)

VEHICLE DAMAGE (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Estimated Maximum Crush:	3-5" at the right corner of the front bumper	Unknown
Damaged Components:	Front bumper, grille, header panel, right headlight assembly, hood, right front fender (for a detailed listing refer to Appendix B, vehicle damage estimate).	
Repair Estimate:	\$4611.87	Total loss

Secondary Impact

Object Struck:	Vehicle #2	
Event Number:	2	
Damage Location:	Right rear door and quarter panel	Left rear corner area
CDC:	03-RPMN-1	09-LBEN-1 (estimated)
Estimated Maximum Crush:	2" at lower right C-pillar	Unknown
Damaged Components:	Right rear quarter panel, right rear door, and wheel opening molding	
Interior (Air Bag Vehicle):	None reported	

COLLISION SEQUENCE

Pre-Crash: The 1990 Mercury Grand Marquis was traveling in an easterly direction on the minor arterial roadway at a driver estimated speed of 30-35 mph. As he approached the three-leg T intersection, several noncontact vehicles initiated a left turn from the local street onto the minor arterial. The driver of the Mercury slowed his vehicle to approximately 25-30 mph as he noted vehicle #2 approach the intersection on the local street. Vehicle #2 accelerated into the intersection as its driver initiated a left turn in front of the Grand Marquis.

The driver of the Grand Marquis braked in an attempt to avoid impact; however, his vehicle continued forward and struck the side of vehicle #2.

COLLISION SEQUENCE (CONT'D.)

Crash: The right frontal area of the Grand Marquis impacted the left front side area of vehicle #2. Resultant directions of force were 12 o'clock for the Mercury and probably within the 10 o'clock sector for vehicle #2. The Mercury underwent a sufficient longitudinal deceleration (\geq 12 mph) to deploy the vehicle's driver air bag system.

The crash rotated the Nissan Sentra in a clockwise direction as the Mercury Grand Marquis continued forward. The left rear corner area of vehicle #2 impacted the right C-pillar area of the air bag vehicle resulting in minor sideslap damage to the Mercury.

The driver of the air bag vehicle was in a normal seated position with both hands bracing against the steering wheel at impact. He was wearing the active 3-point lap and shoulder belt system. At impact, the driver's left knee contacted the knee bolster resulting in a contusion of the left knee. He loaded the active belt webbing and the deployed air bag which caused pain of the back and neck (aggravated a previous back and neck injury). The driver also sustained a small laceration of the right hand from an unknown injury source.

The right front occupant of the air bag vehicle was also restrained by the active 3-point lap and shoulder belt webbing. She apparently extended her arms in an attempt to brace against the upper instrument panel. Her left hand contacted the upper panel which resulted in a fracture of the left ring finger and a small laceration of the 2nd knuckle of the index finger. Both occupants probably rebounded into their respective seatbacks where they came to rest.

Post-Crash: The vehicles came to rest near the secondary point of impact, facing in an easterly direction. Both drivers were able to drive their vehicles to the north shoulder of the minor arterial roadway where they waited for the police to arrive on-scene.

The right front passenger of the air bag vehicle was transported by ambulance to a local hospital where she was treated for her injuries and released. The driver of the Mercury was examined by his physician on the following [REDACTED]

The air bag vehicle was driven from the scene. Vehicle #2 sustained disabling damage and was towed from the scene.

AIR BAG SYSTEM

The driver of the Mercury Grand Marquis notified the NHTSA Auto Safety Hotline and reported a defect with the air bag system. Immediately following the crash, the driver's wife (right front occupant) noted the air bag protruding from the steering assembly. She responded by stating that the air bag did not inflate. The driver then noted the limp bag and agreed that the bag deployed, but did not inflate. The occupants both reported hearing a bang at impact that they associated with air bag deployment and not the impact itself. They also noted a smoke or dust-like substance within the vehicle and detected a foul odor that was similar to a gas odor.

The driver air bag is designed to deflate immediately following deployment. The bag is vented by two 1 inch diameter ports located on the back side of the bag at the 3 and 9 o'clock positions. Typically, by the time a driver notices a deployed air bag, the bag has deflated. The driver of the Mercury understands the deployment and venting of the air bag; however, he still insists that the bag failed to inflate.

The deployed air bag and module assembly have been forwarded to the NHTSA. The agency will then forward the module assembly to TRW (manufacturer) where they will inspect and compare the inflator assembly to known deployed units.

DRIVER DATA

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Age:	62	21
Sex:	Male	Male
Height:	70"	
Weight:	213 lbs.	
Active Restraint System Usage:	3-point lap and shoulder belt system	
Usage Source:	Driver interview	
Eyeglasses:	Prescription eyeglasses; not damaged, remained on face	
Vehicle Familiarity:	8 months	
Route Familiarity:	Weekly	
Trip Plan:	En route to daughter's residence	
Manner of Leaving Scene:	Drove vehicle from scene	
Type of Medical Treatment:	Private physician	

DRIVER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Small laceration of the right hand	Minor (WRLI-1)	Unknown
Contusion of the left knee	Minor (KLCI-1)	Knee bolster
Aggravated a previous back and neck injury	N/A	Impact force/ restraint loading

PASSENGER DATA

Age:	64
Sex:	Female
Height:	68"
Weight:	150 lbs.
Seated Position:	Right front
Active Restraint System Usage:	3-point lap and shoulder belt
Usage Source:	Driver interview
Manner of Leaving Scene:	Ambulance
Type of Medical Treatment:	Treated at a local hospital and released

PASSENGER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Fractured left ring finger	Minor (WLFS-1)	Upper instrument panel (Probable)
Small laceration of the left index finger (2nd knuckle)	Minor (WLLI-1)	Upper instrument panel

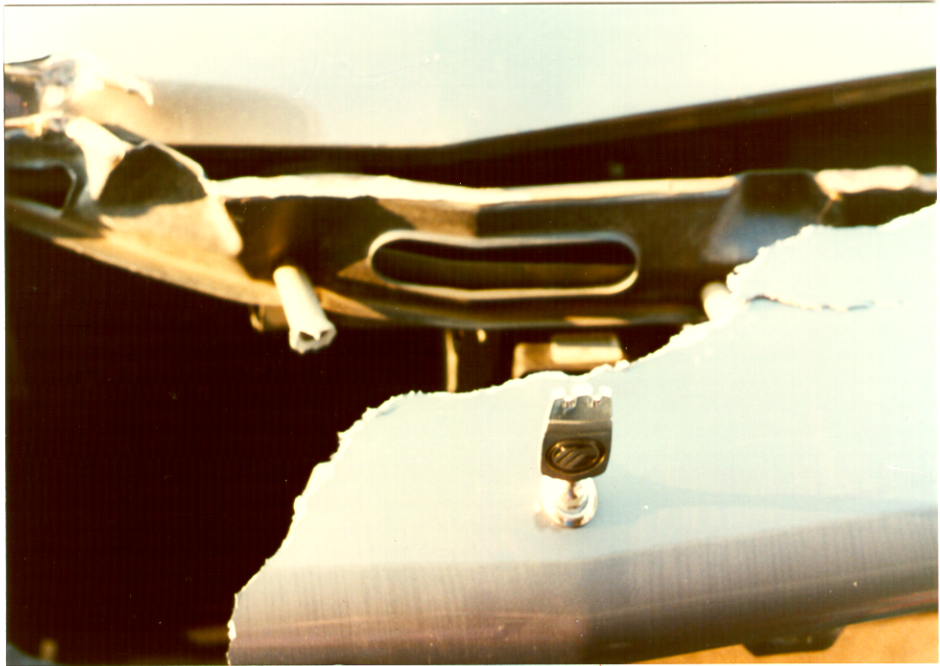
AIR BAG VEHICLE PHOTOGRAPHS



Frontal View Of The Mercury Grand Marquis



Closeup View Of The Impact Damage



Radiator Support Mounted Air Bag Crash Sensor



Sideslap Damage To The Right Rear Quarter Panel



Deployed Driver Air Bag

APPENDIX A

Police Accident Report

ODHS USE ONLY - DO NOT MARK ABOVE

REPORT TAKEN ☐ AT STATION ☒ AT SCENE

NO. OF VEH INVOLVED 2

ACCIDENT SEVERITY (CHECK MOST SEVERE) ☐ FATAL ☒ INJURY ☐ PROPERTY DAMAGE ONLY

COMBINED VEH/PROP LOSS ☒ OVER \$150 ☐ UNDER \$150

HIT SKIP ☐ SOLVED ☐ UNSOLVED

IN COUNTY OF [redacted] IN CITY [redacted] VILLAGE [redacted] TWP [redacted]

CRASH TIME: 14:45

ACCIDENT OCCURRED ON [redacted] RD WITHIN THE INTERSECTION OF [redacted]

IF NOT IN INTERSECTION (LIST NEAREST INTERSECTING STREET, MILEPOST, HOUSE NO.)

MILES: [redacted] FEET [redacted] W [redacted] S [redacted] E [redacted] OF [redacted]

CITY CODE [redacted]

LOG-1 [redacted] LOG-2 [redacted] LOC [redacted] JUR [redacted] FHE [redacted] FLT [redacted] DESC [redacted]

A UNIT NO. 1 NO. OF OCCUPANTS 2 OPERATING ☒ PARKED ☐ DRIVERLESS ☐ HIT & RUN ☐ NON-CONTACT ☐ INSURANCE CO. OR AGENT [redacted]

DRIVER-PEDESTRIAN NAME (LAST, FIRST, MI) [redacted] ADDRESS (NO., STREET, CITY, STATE, ZIP CODE) [redacted] OH

PHONE NO. [redacted] BIRTHDATE [redacted] AGE 26 SEX M SOCIAL SECURITY NO. [redacted] STATE OH DRIVER'S LICENSE NO. [redacted] OCCUPATION TEACHER

OWNER (IF SAME AS DRIVER, WRITE SAME) SAME ADDRESS [redacted] PHONE [redacted]

VEH YR 1990 MAKE MERC. MODEL GRAN. MARO. COLOR GRAY STYLE 4S STATE OH LICENSE PLATE NO. [redacted] TOWING SERVICE NONE VEH/PED DIR FROM E TO W

CIRCLE DAMAGE AREAS [diagram] 9 TOP 10 UNDERCAR 11 LOAD 12 TRAILER DAMAGE SEVERITY ☐ NON-FUNCTIONAL ☒ FUNCTIONAL ☐ DISABLING DAMAGE SCALE ☐ NONE ☐ LIGHT ☒ MODERATE ☒ HEAVY VEHICLE DISPOSITION ☒ DRIVEN AWAY ☐ REMAINED AT SCENE ☐ TOWED FIRE ☒ NO FIRE ☐ FIRE DUE TO CRASH ☐ OTHER FIRE

B UNIT NO. 2 NO. OF OCCUPANTS 1 OPERATING ☒ PARKED ☐ DRIVERLESS ☐ HIT & RUN ☐ NON-CONTACT ☐ INSURANCE CO. OR AGENT NONE

DRIVER/PEDESTRIAN NAME (LAST, FIRST, MI) [redacted] ADDRESS (NO., STREET, CITY, STATE, ZIP CODE) [redacted] OH

PHONE NO. [redacted] BIRTHDATE [redacted] AGE 31 SEX M SOCIAL SECURITY NO. [redacted] STATE OH DRIVER'S LICENSE NO. NONE OCCUPATION COOK

OWNER (IF SAME AS DRIVER, WRITE SAME) SAME ADDRESS [redacted] PHONE [redacted]

VEH YR 1988 MAKE NISSAN MODEL SENTRA COLOR BIK. STYLE 2S STATE OH LICENSE PLATE NO. [redacted] TOWING SERVICE [redacted] VEH/PED DIR FROM S TO N

CIRCLE DAMAGE AREAS [diagram] 9 TOP 10 UNDERCAR 11 LOAD 12 TRAILER DAMAGE SEVERITY ☐ NON-FUNCTIONAL ☒ FUNCTIONAL ☐ DISABLING DAMAGE SCALE ☐ NONE ☐ LIGHT ☒ MODERATE ☒ HEAVY VEHICLE DISPOSITION ☒ DRIVEN AWAY ☐ REMAINED AT SCENE ☒ TOWED FIRE ☒ NO FIRE ☐ FIRE DUE TO CRASH ☐ OTHER FIRE

C FROM UNIT NO. 1 NAME (LAST, FIRST, MI) [redacted] BIRTHDATE [redacted] AGE 25 SEX F POSITION 1 2 3 4 5 6 7 8 9 10 11 12 INJURIES 5 5 3

D FROM UNIT NO. [redacted] NAME (LAST, FIRST, MI) [redacted] BIRTHDATE [redacted] AGE [redacted] SEX [redacted] POSITION [redacted] INJURIES [redacted]

E FROM UNIT NO. [redacted] NAME (LAST, FIRST, MI) [redacted] BIRTHDATE [redacted] AGE [redacted] SEX [redacted] POSITION [redacted] INJURIES [redacted]

F FROM UNIT NO. [redacted] NAME (LAST, FIRST, MI) [redacted] BIRTHDATE [redacted] AGE [redacted] SEX [redacted] POSITION [redacted] INJURIES [redacted]

INJURED TAKEN TO [redacted] Hosp. BY [redacted]

INJURED TAKEN TO [redacted] BY [redacted]

OFFENSE CHARGED AND DESCRIPTION A ☐ O.R.C. CITY ORD: NONE

OFFENSE CHARGED AND DESCRIPTION B ☒ O.R.C. CITY ORD: 331.16/FT 4:9 335.01/NO OL.

RECEIVED CALL 14:48 DISPATCHED 14:48 ARRIVED 15:52 CLEARED 15:35 TOTAL MINUTES 60m, 107

DATE REPORT FILED [redacted] PHOTOS [redacted] YES ☒ NO ☐ OFFICER'S NAME [redacted] BADGE NO. [redacted] CHECKED BY [redacted]

RESTRAINTS 4 4 C D E F

ALCOHOL A TESTED YES ☒ NO ☐ B TESTED YES ☒ NO ☐

1 NO ALCOHOL DETECTED 2 HBD ABILITY IMPAIRED 3 HBD ABILITY NOT IMPAIRED 4 HBD ABILITY UNKNOWN

EJECTION A B C D E F

1 NOT EJECTED 2 PARTIAL 3 TOTAL 4 TRAPPED INSIDE VEHICLE

DRUGS A TESTED YES ☒ NO ☐ B TESTED YES ☒ NO ☐

1 NO DRUGS DETECTED 2 USING PRESCRIBED DRUG 3 USING ILICIT DRUG

DRIVER-PEDESTRIAN-VEHICLE SECTION

OCCUPANT SECTION

OFFICER SECTION

UNIT 1 WAS EIB ON RD. #2 WAS
PULLING OUT OF NIB TO GO W/B
#2 PULLED OUT DIRECTLY ACROSS #1'S ONCOMING PATH
& UNIT 1 STRUCK UNIT 2
PASSENGER FROM UNIT 1 WAS TREATED AND
RELEASED AT HOSP FOR A SMALL CUT ON HER
2ND KNUCKLE, LEFT INDEX FINGER

WEATHER 1 NO ADVERSE WEATHER 2 RAIN 3 SNOW 4 FOG 5 HIGH WIND 6 OTHER		FIRST HARMFUL EVENT 1 TWO MV IN TRANSPORT 1 HEAD ON 2 REAR-END 3 BACKING 4 SIDESWIPE MEETING 5 SIDESWIPE PASSING 6 ANGLE	<p>NOT TO SCALE DIAGRAM IS AN APPROXIMATION MEASUREMENTS NOT TAKEN. BOTH VEHICLES MOVED TO OPPOSITE SIDE OF STREET PRIOR TO MY ARRIVAL</p> <p>SHOW NORTH WITH ARROW</p>
ROAD CONDITIONS 1 DRY 2 WET 3 SNOW 4 ICE 5 DIRT/SAND 6 OTHER		ONE MV IN TRANSPORT (COLLISION) 7 PARKED MOTOR VEH 8 PEDESTRIAN 9 ANIMAL 10 TRAIN 11 PEDALCYCLE 12 OTHER NON-M V 13 FIXED OBJECT 14 OTHER OBJECT (NON-COLLISION) 15 FALL FROM OR IN VEH 16 OVERTURNING 17 OTHER NON-COLLISION	
LIGHT 1 DAYLIGHT 2 DAWN 3 DUSK 4 DARK NO LIGHTS 5 DARK-LIGHTED 6 OTHER		LOCATION 1 1 INTERSECTION 2 INTERSECTION-RELATED 3 DRIVEWAY ACCESS 4 RAILROAD CROSSING 5 BRIDGE-PASSING OVER 6 BRIDGE-PASSING UNDER 7 NON-INTERSECTION 8 PRIVATE PROPERTY	
ROAD CONTOUR 1 STRAIGHT LEVEL 2 STRAIGHT GRADE 3 CURVE LEVEL 4 CURVE GRADE		RAMP LETTER CODE	
OCCURRENCE 1 ON ROADWAY 2 OFF LEFT SIDE 3 OFF RIGHT SIDE 4 ON OPPOSING LANE OF A DIVIDED HIGHWAY			
SPECIAL AREA 1 ROAD CONSTRUCTION 2 SCHOOL ZONE 3 MAINTENANCE AREA			

TYPE OF UNIT 1 CAR 2 BUS 3 TRUCK 4 MOTORCYCLE 5 MC UP TO 350CC 6 MC351CC TO 750CC 7 MC OVER 751CC 8 MOTORIZED BICYCLE 9 SUB-COMPACT 10 COMPACT 11 MID SIZE 12 FULL SIZE 13 PICKUP 14 PANEL VAN 15 STRAIGHT TRUCK 16 STRAIGHT TRUCK AND TRAILER 17 TRACTOR TRACTOR 18 TRACTOR & SEMI-TRAILER 19 TRACTOR & DOUBLE TRAILER 20 MOTORCYCLE 21 MC UP TO 350CC 22 MC351CC TO 750CC 23 MC OVER 751CC 24 MOTORIZED BICYCLE 25 SCHOOL 26 CHURCH 27 PUBLIC BUS 28 EMERGENCY 29 POLICE VEHICLE 30 FIRE TRUCK 31 AMBULANCE/RESCUE 32 TAXI 33 MOTOR HOME 34 TRAIN 35 FARM VEHICLE 36 FARM EQUIPMENT 37 SNOWMOBILE 38 CONSTRUCTION EQUIP 39 ANIMAL W/RIDER 40 ANIMAL W/BUGGY 41 BICYCLE 42 ALL OTHERS P PEDESTRIAN		PRE-ACCIDENT ACTIONS 1 DRIVER ACTIONS 2 GOING STRAIGHT 3 TURNING RIGHT 4 TURNING LEFT 5 TURNING ON RED LIGHT 6 U TURN 7 STOPPED TO TURN 8 STOPPED IN TRAFFIC 9 PARKING/UNPARKING 10 PARKED 11 BACKING 12 PASSING 13 CHANGING LANES 14 MERGING/EXITING RAMP 15 OUT OF CONTROL 16 SWERVING 17 DRIVERLESS VEH 18 OTHER DRV ACTIONS 19 PEDESTRIAN ACTIONS 20 CROSSING IN X-WALK 21 CROSSING OTHER THAN X-WALK 22 WALKING IN ROAD (WITH TRAFFIC) 23 WALKING IN ROAD (AGAINST TRAFFIC) 24 PLAYING IN ROAD 25 WORKING ON ROAD 26 ENTERING OR LEAVING VEHICLE 27 PUSHING/WORKING ON VEH IN ROAD 28 OTHER IN ROAD 29 ON SIDEWALK OR SHOULDER 30 TRAFFIC CONTROL 31 DRIVER 32 NO CONTROLS 33 STOP SIGN 34 YIELD SIGN 35 TRAFFIC SIGNAL 36 TRAFFIC FLASHERS 37 SCHOOL ZONE 38 RAILROAD CROSSBUCKS 39 RAILROAD FLASHERS 40 RAILROAD GATES 41 CONSTR BARRICADES 42 POLICE OFFICER 43 PAVEMENT MARKINGS 44 OTHER 45 PEDESTRIAN 46 NO CONTROLS 47 CROSSWALK LINES 48 WALK/DONT WALK DEVICE		CONTRIBUTING FACTOR 1 DRIVER ERROR 2 NONE 3 FAILURE TO YIELD 4 UNSAFE SPEED 5 FOLLOWING TOO CLOSELY OR ACDA 6 RAN RED LIGHT 7 RAN STOP OR YIELD SIGN 8 IMPROPER TURN 9 IMPROPER PASSING 10 IMPROPER LANE CHANGE 11 IMPROPER BACKING 12 IMPROPER START FROM PARKED POSITION 13 STOPPED OR PARKED ILLEGALLY 14 LEFT OF CENTER 15 FAILURE TO CONTROL 16 DRIVER INATTENTION 17 DROVE OFF ROAD 18 REASON UNKNOWN 19 OTHER DRIVER ERROR 20 TRUCK LOAD 21 EMPTY 22 PERISHABLE GOODS 23 GENERAL FREIGHT 24 METAL/HEAVY MACHINERY 25 HAZARDOUS GAS 26 HAZARDOUS LIQUID 27 HAZARDOUS SOLID 28 RADIOACTIVE MATERIAL 29 TRUCK AXLES 30 TRACTOR-TRAILER RIGS 31 NON-DRIVER FACTOR 32 VEHICLE DEFECTS 33 LOAD SHIFTING 34 FALLING, SPILLING 35 PAVEMENT DEFECT 36 SHOULDER DEFECT 37 DEBRIS ON ROAD 38 DOWNED TRAFFIC SIGN/DEVICE 39 VISION OBSTRUCTION 40 ANIMAL ACTIONS 41 PEDESTRIAN ACTIONS 42 VEHICLE DEFECTS 43 CODE IF CONTRIBUTING FACTOR IS 18 44 PRIMARY 45 SECONDARY 46 TURN SIGNALS 47 HEAD LAMPS 48 TAIL LAMPS 49 BRAKES 50 STEERING 51 TIRE BLOWOUT 52 WORN OR SLICK TIRES 53 TRAILER EQUIPMENT DEFECTIVE 54 MOTOR TROUBLE 55 DISABLED FROM PRIOR ACCIDENT 56 OTHER DEFECTS	
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APPENDIX B

Air Bag Vehicle Damage Estimate

INSURANCE COMPANY

OH

A2 LOG NO DATE /90

CLAIM#
 COMPANY
 INSURED
 LOSS DATE /90

POLICY#
 CLAIM REP
 CLAIMANT
 TYPE OF LOSS COLL/D

NSP DATE /90
 ESTIMATOR

LOCATION BHSC
 COMPANY

SHOP OWNERS CHOICE

ATTN OF

NAME
 ADDRESS
 CITY STATE
 ZIP

PHONE

LIC#
 ENG/COLOR

VIN
 MILEAGE

2MECM75E2CX
 002311

E=NEW PART EC=QUAL REPL PART EU=LIKE KIND & QUALITY EP=QUAL RPL PRT RPT F=CHECK
 T=REPAIR/ALIGN/SUBLET L=REFINISH N=ADDITIONAL LABOR OPERATION
 E=PART/PARTIAL REPLACE ET=LABOR/PARTIAL REPLACE IT=LABOR/PARTIAL REPAIR
 AA=APPEARANCE ALLOWANCE RP=RELATED PRIOR DAMAGE UP=UNRELATED PRIOR DAMAGE

FURTHER DAMAGE TO BE INSPECTED AFTER TEAR DOWN

1990 MERCURY GRAND MARQUIS LS 4 DR SED R4233B OPTNS D/PMFZR

OPTIONS: FRONT BUMPER GUARDS POWER SEATS
 POWER DOOR LOCKS HEATED REAR WINDOW
 TILT STEERING WHEEL

OP	GDE	MC	DESCRIPTION	MFG. PART NO.	PRICE	AJ%	HOURS
E	005		BUMPER,FRONT	E8MY17757A	261.33		1.5
E	006		REINF,FRONT BUMPER	E8AZ17A792A	164.55		
E	008		ABS,FRONT ENERGY	LT E9MY17754A	92.65		.3
E	009		ABS,FRONT ENERGY	RT E9MY17754A	92.65		.3
E	023		FILLER,FRONT BUMPER	E8MY17779A	181.55		
L	023		FILLER,FRONT BUMPER	REFINISH			1.5 4
E	028		GRILLE ASSEMBLY	E9MY8200A	224.88		1
E	030		PANEL,FRONT END	E9MY8190A	351.65		1.0 1
E	034		DEFL,FRONT BUMPER	E8AZ54001A06A	18.17		
E	042		HEADLAMP ASSY,HALOGEN	RT E9MY13008A	101.82		.2
E	055		SEALED BEAM,INR HLGN	LT D94Y13007C	15.79		.1
E	060		DOOR,HEADLAMP	RT E8MY13064A	46.20		

ALL SUPPLEMENTS REQUIRE PRIOR APPROVAL BY A CLAIM REPRESENTATIVE.

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062	PARKLAMP ASSEMBLY	RT	E8MY13200A	38.63	
073	01 PANEL,RAD SUPT		FOAZ16138A	150.73	7.0
080	MLDG,WHEEL OPNG	RT	E9AZ16038A	24.92	.3
083	PANEL,HOOD		E8AZ16612A	368.35	1.2
084	HINGE,HOOD PANEL	LT	E7AZ16797A	16.18	
085	HINGE,HOOD PANEL	RT	E7AZ16796A	16.18	
086	CATCH,HOOD SAFETY		D9AZ16892A	6.73	
087	PLATE,HOOD LATCH MTG		E8AZ16707A	16.50	
088	SUPT,HOOD LOCK VERT		E8AZ16747A	8.93	
089	LATCH,HOOD PANEL		E1TZ16700A	20.80	
103	FENDER,FRONT	LT	FOAZ16006A	286.83	2.9
104	FENDER,FRONT	RT	FOAZ16005B	286.83	2.9
121	SENSOR,AIR BAG		FOAZ14B006A	92.71	
138	MLDG,FENDER LWR	L/R	E8MY16037AGP	40.17	.2
209	PNL,FRT DOOR OTR	LT	REPAIR/ALIGN		4.0*
209	PNL,FRT DOOR OTR		LT REFINISH		2.2
210	PNL,FRT DOOR OTR	RT	REPAIR/ALIGN		5.0*
210	PNL,FRT DOOR OTR		RT REFINISH		2.0
290	PNL,RR DOOR OTR	RT	REPAIR/ALIGN		3.0*
290	PNL,RR DOOR OTR		RT REFINISH		1.8
390	PANEL,QUARTER	RT	REPAIR/ALIGN		8.0*
390	PANEL,QUARTER		RT REFINISH		2.0
394	PNL,WHLHS OUTER	RT	REPAIR/ALIGN		1.0*
412	MLDG,QTR WHL OPNG	RT	E9AZ5429164A	24.92	.3
424	MLDG,QTR LOWER	R/F	E8MY5429076AGP	21.70	.2
554	STRIP,FRT IMPACT	RT	E8MY17K833B	14.27	
M01	CLEAR COAT		ADDTL LABOR		1.5*
M05	RUSTPROOFING		** QUALITY REPL PART	45.00*	
M18	SET-UP AND MEASURE		ADDTL LABOR		2.0*1
	FRAME REPAIR		ADDTL LABOR		6.0*3
	RECHARGE AIR		ADDTL LABOR	40.00*	
	STRIPES		ADDTL LABOR		2.0*4

44 ITEMS

MC MESSAGE

01 CALL DEALER FOR EXACT PART # REQUIRED

F VAL CALCULATIONS & ENTRIES

GROSS PARTS				2,986.62
ADJUSTMENTS	DISCOUNT	@	10.00%	298.66-
OTHER PARTS				85.00
PAINT MATERIAL				130.00
PARTS TOTAL				2,902.96
TAX ON PARTS & MATERIAL		@	7.000%	203.21
LABOR	RATE	REPLACE HRS	REPAIR HRS	
1-SHEET METAL	23.00	18.4	23.0	952.20
2-MECH/ELEC	30.00			
3-FRAME	26.00		6.0	156.00
4-REFINISH	23.00	9.5	3.5	299.00
5-PAINT MATERIAL	10.00			
LABOR TOTAL				1,407.20
TAX ON LABOR		@	7.000%	98.50
SUBLET REPAIRS				
TOWING & STORAGE				

AUTHORIZATION TO REPAIR.
 THIS IS NOT AN AUTHORIZATION TO REPAIR.
 ALL SUPPLEMENTS REQUIRE PRIOR APPROVAL
 BY A REPRESENTATIVE.

(AND MARQUIS LS 4 DR SED

BEST AVAILABLE COPY

LOSS TOTAL
LESS: DEDUCTIBLE
NET TOTAL

PAGE 3
DATE [REDACTED] /90

4,611.87
250.00-

4,361.87

DF AUDATEX A2 U ES LOG [REDACTED] DATE [REDACTED] /90 10:30:55 040
XN.NN/00/00/00/00 CUM:00/00/00/00 NSU

NO ICE - REPAIRS TO THIS VEHICLE MAY REQUIRE SPECIFIC
EQUIPMENT AS RECOMMENDED BY THE MANUFACTURER"

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