### Case 474: Narrative

Case Vehicle (A): 2002 Mercury	Vehicle (B): 1997 Ford
Type: Grand Marquis LS, 4-door sedan	Type: Ranger XL, 4x2, 2-door pickup
Driver: 77-year-old male	Driver: 30-year-old male
CDC: 12-FDEW-2	CDC: 99-0000-0

#### SITUATION

1 It was daylight and raining and the asphalt surface of the Y-type intersection of the two-lane roads was wet but in good condition. 2 Case vehicle (A) was traveling south at an unknown speed in the southbound lane of the north-south road and 3 vehicle (B) was stopped facing north in the northbound lane of the intersecting road. 4 The driver of case vehicle (A) may have passed out due to medical problems and, as the north-south road curved to the east (to the left), case vehicle (A) went straight, entered the intersecting road, and the front of case vehicle (A) struck and under-rode the front of vehicle (B). Both vehicles were towed due to damage.

The police accident report indicates B-level injuries for the drivers of both case vehicle (A) and vehicle (B), and no injuries for the right-front passenger of vehicle (B). The driver of case vehicle (A) was transported by ambulance to a level-one trauma center and hospitalized for three days. The driver of case vehicle (A) had been drinking and the results of a police blood test revealed a .14% blood-alcohol level.

# GENERAL VEHICLE DAMAGE AND ESTIMATED CRASH SEVERITIES

5 Damage to the front of case vehicle (A) was moderate. 6 Direct damage began at the right-front bumper corner and extended 114 cm to the left edge of the radiator, resulting in 67% vehicle overlap (% VOL). 7 The maximum rearward crush was 57 cm and it occurred at the upper-right radiator support. 8 The maximum rearward bumper crush was 32 cm and it occurred at the right-front bumper corner.

The driver of vehicle (B) would not permit a vehicle inspection.

Using the missing-vehicle algorithm of the WinSMASH crash-reconstruction program and a crush profile measured for the front of case vehicle (A) <u>9 10 11 12</u> at the level of the upper radiator support, the following impact severities were estimated:

		Estimated Velocity Change - kph (mph)		
Vehicle	Variable	Total	Longitudinal	Latitudinal
Case Vehicle (A)	delta V	34 (21)	-34 (-21)	-6 (-4)
Vehicle (B)	delta V	43 (26)	-43 (-26)	0 (0)

Case vehicle (A) was equipped with a downloadable Event Data Recorder (EDR). The EDR data indicate that the driver seatbelt was buckled and that the pretensioner fired 26.4 milliseconds into the

event. They also indicate that the driver seat was not in a full-forward seat-track position. The EDR data indicate that the driver airbag met the unbelted stage-1 deployment criteria at 26.4 milliseconds and stage 2 was disposed of at 126.4 milliseconds into the event. The maximum-recorded longitudinal velocity change was -21.67 mph at 76.8 milliseconds.

### **DESCRIPTION OF DAMAGE TO CASE VEHICLE (A)**

#### **Exterior**

13 14 In the front, the bumper was crushed rearward and bent down due to the override by vehicle (B), and the hood and upper radiator support were crushed rearward. The hood was buckled up in the middle and 15 the hood latch was damaged and jammed closed. 16 The left hood hinge was not damaged, 17 the right hood hinge was deflected to the left, and 18 the rear edge of the hood was elevated and it had contacted and cracked the lower-right corner of the windshield. 19 The inner part of the windshield in front of the driver was scuffed, possibly from contact by the steering-wheel airbag.

20 On the left side, the fender was deflected to the right, 21 both doors were closed and operational, the glazing was intact, and the left-side wheelbase was reduced by 5 cm.

There was no damage to the rear of the vehicle.

22 On the right side, the fender was crushed rearward and buckled. 23 The right-side doors were closed and operational and the glazing was intact, but the right wheelbase was reduced by 8 cm.

#### Interior

This vehicle was equipped with steering-wheel and dash-mounted frontal-impact airbags and 24 25 both deployed in this frontal impact. 26 27 28 In the driver area, there was no damage to the deployed steering-wheel airbag or to the module flaps/covers. 29 30 31 The steering-wheel rim and spokes were bent forward, 32 the upper-left section of the wooden steering-wheel rim was cracked, 33 the left steering-wheel spoke was scuffed, and 34 the steering column was deflected up and to the right. 35 36 The sunvisor was scuffed and 37 the vanity mirror on the sunvisor was broken. 38 The windshield over the steering wheel was scuffed from contact by the steering-wheel airbag. 39 The left section of the driver knee bolster was scuffed and cracked, the fuse box was displaced, the underside of the plastic steering-column cover was scuffed, and the knee bolster to the right of the steering column was dented. 40 The mid instrument-panel trim was displaced and hanging by a wire. There was no other damage in the driver area.

- 41 42 In the center-front area, the mid instrument-panel trim, the ashtray, and the access panel were displaced. 43 The left ashtray bracket was bent up and to the right. 44 There was no other damage in the center-front area.
- 45 46 In the right-front seating area, there was no damage to the dash-mounted airbag or to 47 the module flap/cover. 48 The mid instrument-panel trim was displaced and separated from the dashboard. There was no other damage in the right-front occupant area.
- 49 50 There was no damage in the rear seating areas and there were no intrusions into the interior of the vehicle.

### **OCCUPANT KINEMATICS AND INJURIES**

51 The 175-cm, 111-kg (5-ft 9-in, 245-lb) 77-year-old male driver was not using the three-point belt, which was buckled behind him, and 52 the steering-wheel airbag deployed. 53 54 During the frontal impact, the unbelted male driver moved forward relative to the vehicle interior, into the knee bolster and airbag. He sustained a laceration to the right knee probably due to contact with the ashtray bracket, and he sustained an abrasion to the right knee, probably due to contact with the knee bolster and/or the side of the center instrument stack. He sustained a contusion to the left knee, probably due to contact with the knee bolster, as evidenced by scuffmarks. He sustained a sprained left ankle, probably due to loading of the left foot on the toepan.

The following table and drawing 55 summarize the injuries for the driver of case vehicle (A).

Occupant: Driver	Age: 77 yea	rs	Gender: Male		
Restraints: Steering-wheel airbag	Stature: 175 in)	cm (5 ft, 9	Mass: 111 kg (245 lb)		5 lb)
Injury Description		A.I.S.	In	jury Sour	ce
			Definite	Probable	Possible
Laceration, right knee		1	_	Ashtray bracket	_
Abrasion, right knee		1		Knee bolster	
Contusion, left knee		1		Knee bolster	
Sprain, left ankle		1		Toepan	
Maximum A.I.S. Level	1		_		
Injury Severity Score		2	_	_	

CASE NO .: 474

CASE VEHICLE: 2002 Mercury

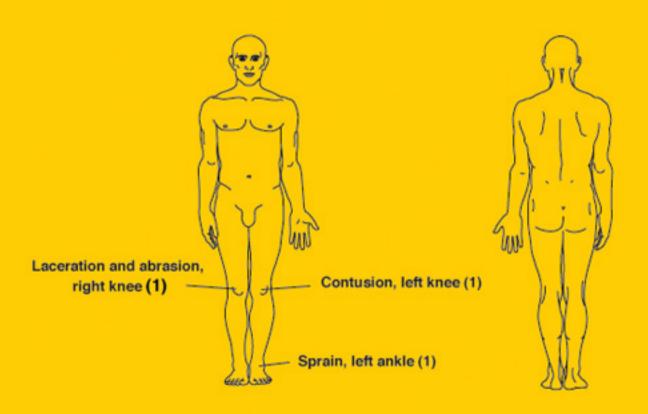
TYPE: Grand Marquis LS, 4-door sedan

OCCUPANT: Driver: 77-year-old male

STATURE: 175 cm (5 ft, 9 in) MASS: 111 kg (245 lb)

RESTRAINTS: Steering-wheel airbag

SEVERITY: MAIS - 1 : ISS - 2



Case No.: 474

Case Veh. (A): 2002 Mercury

Type: Grand Marquis LS, 4-door sedan

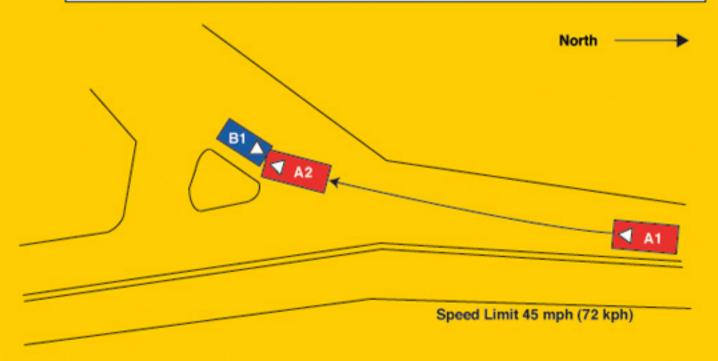
Driver: 77-year-old male

Veh. (B): 1997 Ford Ranger XL, 4x2, 2-door pickup

Light Conditions: Daylight

Weather: Rain Road Surface: Wet

Road Construction: Asphalt



# 474: Vehicle Report

#### Click on Section Name to jump directly to that Section —

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- Case Vehicle General
- Case Vehicle Damage Description
- Crash Reconstruction
- Case Vehicle Tires & Rims
- Case Vehicle Fuel Tank
- Case Vehicle Fuel Leakage
- Case Vehicle Fire
- Case Vehicle Exterior
- Case Vehicle Steering Column/Rim
- Case Vehicle Intrusion
- Case Vehicle Airbag(s)
- Case Vehicle Interior
- Case Vehicle Seats
- Case Vehicle Side Airbag(s)
- EDR -- Event Data Recorder

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0204	Collision Hour	1450	Time of day (24 hour clock)	more
V0205	State Fips Code	26	Michigan	<u>more</u>
V0206	Urban/rural Area	2	Rural	more
V0207	Limited Access Highway	0	No	more
V0208	Road Total Lanes	2	2 lanes	more
V0209	Intersect Road Total Lanes	2	2 lanes	more
V0210	Trafficway Flow	0	Not physically divided - two way traffic	more
V0211	Road Surface Type	1	Asphalt	more
V0212	Road Defects	0	No	more
V0213	Construction Zone	0	No	more
V0214	Road Alignment Vertical Plane	1	Level	more

V0215	Road Alignment Horzontal Plane	4	Y-shaped	more
V0216	Surface Covering	22	Water - wet	more
V0217	Visibility Limitation	0	None	more
V0218	Visibility Obstruction	0	None	more
V0219	Speed Limit	4	71-79 km/h 45 mph	more
V0220	Precipitation Type	1	Rain	more
V0221	Precipitation Rate	2	Moderate	more
V0222	Temperature	6	16 to 25 C 60 to 77 F	more
V0223	Crosswind	1	Light	more
V0224	Light Conditions	1	Daylight	more
V0225	Mechanical Malfunction Mention	0	No	more
V0226	Case Vehicle And Object	0	No	more
V0227	Case Vehicle Rollover	0	No	more
V0228	Rollover Location	0	No rollover	more
V0229	Roll Direction	0	No rollover	more
V0230	Rollover Initation Type	0	No rollover	more
V0231	Rollover Number Of Turns	0	No rollover	more
V0232	Case Vehicle Preimpact Braking	9	Unknown	more
V0233	Case Vehicle Preimpact Stability	1	Case vehicle tracking before impact	more
V0234	Case Vehicle Ran Off Roadway	0	No	more
V0235	Moving Case Vehicle Contacted Moving Vehicle	0	No	more
V0236	Case Vehicle Contacted Stopped Vehicle	1	Yes	more
V0237	Stopped Case Vehicle Contacted Vehicle	0	No	more
V0238	Total Vehicles Hit By Case Vehicle	1	1 vehicle	more
V0239	Any Fire In Crash?	0	No	more
V0240	Maximum Police Severity-acc	2	B - Non-Incapacitating Injury	more
V0241	Driver Alcohol Involvmnt	1	Had been drinking	more
V0242	Driver Alcohol BAC (Case Vehicle)	0.14	Actual BAC	more
V0243	Driver Impairment Mention	1	Yes	more
V0244	Driver Distraction	99	Unknown	more

V0245	Driver Drug Involvement	1	Yes, drug use mentioned	<u>more</u>
V0246	Driver Drug Type		Prescription drugs used by diver for known medic	<u>more</u>
V0247	Driven/towed From Scene	2	Towed Due to Damage	<u>more</u>

Other Vehicle Back to Top

Variable Number	Variable Name	Code Value	Code Description	Other Options
V0301	Other Vehicle VIN	1FTCR10X8VXXXXXX	Click for Contacted Vehicle figure	more
V0302	Other Vehicle Manufacturer/Body Code	12112		
V0303	Other Vehicle Manufacturer	121	Ford	more
V0304	Other Vehicle Body Code	12	Pickup truck (no canopy or shell)	more
V0305	Other Vehicle Make/model	3121	Ranger R10	more
V0306	Other Vehicle Model Year	1997	Year	more
V0307	Other Vehicle Mass	001378 kg	Mass (Kg.)	more
V0308	Other Vehicle Number	0	No separate report	more
V0309	Other Vehicle Number of Occupants	02	number of occupants	more
V0310	Other Vehicle Traveling Speed	000 kph	Parked or just starting	more
V0311	Highest Police Injury Severity	2	B - Non-Incapacitating Injury	more
V0312	Other Vehicle Type	12	Pickup truck	more
V0313	Other Vehicle Wheelbase in Centimeters	274 cm	Actual Wheelbase (cm)	more
V0314	Other Vehicle Average Track Width	145 cm	actual measurement (cm)	more
V0315	Other Vehicle Overall Length	468 cm	actual measurement (cm)	more
V0316	Other Vehicle Overall Width (OAW)	176 cm	actual measurement (cm)	more
V0317	Other Vehicle Front Overhang	085 cm	actual measurement (cm)	more

V0318	Other Vehicle Rear Overhang	109 cm	actual measurement (cm)	more
V0319	Other Vehicle Undeformed End Width (UEW)	140 cm	actual measurement (cm)	more
V0320	Other Vehicle Engine Displacement	4.0 <i>l</i>	Liters	<u>more</u>
V0321	Other Vehicle Engine: Number of Cylinders	06	number of cylinders	more
V0322	Other Vehicle Direct Damage Length (DDL)	999	Unknown	more
V0323	Other Vehicle Front- End Overlap	99	Missing or Not applicable	more
V0324	Other Vehicle - Vehicle Overlap	99	Missing or Not applicable	more

### **Case Vehicle General**

Variable Number	Variable Name	Code Value	Code Description	Other Options
V0401	VIN	2MEFM75W72XXXXXX	Click for Case Vehicle figure	more
V0402	Manufacturer/Body Code	22229	_	
V0403	Vehicle Manufacturer	222	Lincoln-Mercury	more
V0404	Vehicle Body Code	29	Full 110-114.9 in. wb.	more
V0405	Make/model Code	0929	Grand Marquis	more
V0406	Model Year	2002	Model year	more
V0407	Vehicle Mass	001809 kg	Mass (Kg)	more
V0408	Odometer Reading	888888		
V0409	Number of Occupants	01	1 occupant	more
V0410	Traveling Speed	999	Unknown	more
V0411	Body Type	14	4-door sedan	more
V0412	Stolen Vehicle	8	Not currently collected	more
V0413	Body Structure	1	Body and frame	more
V0414	Transmission Type	1	Automatic	more
V0415	Transmission Lever Location	3	Column	more
V0416	Steering	1	Power	more
V0417	Brakes	1	Power	more
V0418	Brake Type	3	Disc - all wheels	more
V0419	Adjustable Pedals?	1	Yes	more

V0420	Brake Anti-lock Device	2	Four-wheel	more
V0421	Air Conditioning in Vehicle	8	Not currently collected	more
V0422	Drive Type	1	Rear wheel	more
V0423	Dual Rear Wheels	0	No	<u>more</u>
V0424	Original Restraint System Type	3	Air bag	<u>more</u>
V0425	Equipped With Roll Bar	0	No	more
V0426	Roof Type	1	Solid	more
V0427	Case Vehicle Wheelbase in Centimeters	291 cm	Actual Wheelbase	more
V0428	Anti-lacerative Glass	8	Not Collected	<u>more</u>
V0429	Case Vehicle average track Width	163 cm	actual measurement (cm)	more
V0430	Case Vehicle Overall Length	538 cm	actual measurement (cm)	<u>more</u>
V0431	Case Vehicle Overall Width (OAW)	199	actual measurement (cm)	<u>more</u>
V0432	Case Vehicle Front Overhang	108 cm	actual measurement (cm)	<u>more</u>
V0433	Case Vehicle Rear Overhang	139 cm	actual measurement (cm)	more
V0434	Case Vehicle Undeformed End Width (UEW)	160 cm	actual measurement (cm)	more
V0435	Case Vehicle Engine Displacement	4.6 <i>l</i>	Liters	<u>more</u>
V0436	Case Vehicle Engine: Number of Cylinders	08	number of cylinders	<u>more</u>
V0437	Case Vehicle Direct Damage Length (DDL)	114 cm	actual measurement (cm)	<u>more</u>
V0438	Case Vehicle Front-end Overlap	71	percentage (%)	more
V0439	Case Vehicle - Vehicle Overlap	67	percentage (%)	more

# **Case Vehicle Damage Description**

Variable Number	Variable Name	Code Value	Code Description	Other Options

V0501	Maximum Sheet Metal Crush - Front	057 cm	Depth of Crush (cm)	<u>more</u>
V0502	Maximum Sheet Metal Crush - Right Side	000 cm	No Crush (or less than 1 cm.)	more
V0503	Maximum Sheet Metal Crush - Rear	000 cm	No Crush (or less than 1 cm.)	more
V0504	Maximum Sheet Metal Crush - Left Side	000 cm	No Crush (or less than 1 cm.)	more
V0505	Maximum Sheet Metal Crush - Roof	000 cm	No Crush (or less than 1 cm.)	more
V0506	Maximum Sheet Metal Crush - Other	000 cm	No Crush (or less than 1 cm.)	more
V0507	Seq In Chronologicl Ordr	1	Yes	more
V0508	Event 1 -impact Location	1	On Roadway	<u>more</u>
V0509	Event 1 -Impact Configuration	11	FRONT of case veh - FRONT of contacted veh	more
V0510	Event 1 -Object/Vehicle Contactd	12	Pickup truck	<u>more</u>
V0511	Event 2 -impact Location	8	No 2nd event	<u>more</u>
V0512	Event 2 -Impact Configuration	88	No 2nd event	more
V0513	Event 2 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0514	Event 3 -impact Location	8	No 3rd event	more
V0515	Event 3 -Impact Configuration	88	No 3rd event	<u>more</u>
V0516	Event 3 -Object/Vehicle Contactd	00	No object/vehicle contacted	<u>more</u>
V0517	Event 4 -impact Location	8	No 4th event	more
V0518	Event 4 -Impact Configuration	88	No 4th event	<u>more</u>
V0519	Event 4 -Object/Vehicle Contactd	00	No object/vehicle contacted	<u>more</u>
V0520	Event 5 -impact Location	8	No 5th event	more
V0521	Event 5 -Impact Configuration	88	No 5th event	more
V0522	Event 5 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0523	Event 6 -impact Location	8	No 6th event	more
V0524	Event 6 -Impact Configuration	88	No 6th event	more
V0525	Event 6 -Object/Vehicle	00	No object/vehicle contacted	more

	Contactd			
V0526	Event 7 -impact Location	8	No 7th event	more
V0527	Event 7 -Impact Configuration	88	No 7th event	more
V0528	Event 7 -Object/Vehicle Contactd	00	No object/vehicle contacted	more
V0529	Primary CDC Case Vehicle - event Number	1	Event 1	more
V0530	Primary CDC Case Vehicle - Impact Speed (kph)	022	Impact speed (kph)	more
V0531	Primary CDC Case Vehicle- estimatr	6	EDR data	more
V0532	Primary CDC Case Vehicle - Crush (CM)	057	Crush measurements in cm	more
V0533	Primary CDC Case Vehicle- clock #1	12	12 o'clock	more
V0534	Primary CDC Case Vehicle- Letter 1 #1	06	F - Front	more
V0535	Primary CDC Case Vehicle- Letter 2 #1	04	D - Distributed (Side or End)	more
V0536	Primary CDC Case Vehicle- Letter 3 #1	05	E - Everything below belt line	<u>more</u>
V0537	Primary CDC Case Vehicle- Letter 4 #1	23	W - Wide impact area	more
V0538	Primary CDC Case Vehicle Extent #1	02	Extent 2	more
V0539	Primary CDC - Contacted Vehicles Assoc CDC - CDC #1	12FDEW2		_
V0540	Primary CDC Case Vehicle- clock #2	98	Not Applicable	more
V0541	Primary CDC Case Vehicle- Letter 1 #2	00	Missing Data/Not applicable	more
V0542	Primary CDC Case Vehicle- Letter 2 #2	00	Missing Data/Not applicable	more
V0543	Primary CDC Case Vehicle- Letter 3 #2	00	Missing Data/Not applicable	more
V0544	Primary CDC Case Vehicle- Letter 4 #2	00	Missing Data/Not applicable	more
V0545	Primary CDC Case Vehicle Extent #2	00	Missing Data/Not applicable	more
V0546	Primary CDC - Case Vehicle Assoc CDC - CDC #2	9800000		

V0547	Primary CDC Contacted Vehicle - Impact Speed (kph)	999	Unknown	more
V0548	Primary CDC Contacted Vehicle-estimater	1	Investigator	more
V0549	Primary CDC Contacted Vehicle - Crush (CM)	999	Unknown	more
V0550	Primary CDC Contacted Vehicle-clock #1	99	Unknown or no damage	more
V0551	Primary CDC Contacted Vehicle-Letter 1 #1	00	Missing Data/Not applicable	more
V0552	Primary CDC Contacted Vehicle-Letter 2 #1	00	Missing Data/Not applicable	more
V0553	Primary CDC Contacted Vehicle-Letter 3 #1	00	Missing Data/Not applicable	more
V0554	Primary CDC Contacted Vehicle-Letter 4 #1	00	Missing Data/Not applicable	more
V0555	Primary CDC Contacted Vehicle Extent #1	00	Missing Data/Not applicable	more
V0556	primary CDC - Contacted Vehicles Assoc CDC - CDC #1	9900000		_
V0557	Primary CDC Contacted Vehicle-clock #2	99	Unknown or no damage	<u>more</u>
V0558	Primary CDC Contacted Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0559	Primary CDC Contacted Vehicle-Letter 2 #2	0.0	Missing Data/Not applicable	<u>more</u>
V0560	Primary CDC Contacted Vehicle-Letter 3 #2	00	Missing Data/Not applicable	<u>more</u>
V0561	Primary CDC Contacted Vehicle-Letter 4 #2	0.0	Missing Data/Not applicable	<u>more</u>
V0562	Primary CDC Contacted Vehicle Extent #2	0.0	Missing Data/Not applicable	<u>more</u>
V0563	Primary CDC - Contacted Vehicles Assoc CDC - CDC #2	9900000		_
V0564	Secondary CDC Case Vehicle-event No	8	Not applicable	<u>more</u>
V0565	Secondary CDC Case Vehicle - Impact Speed (kph)	998	Not Applicable	more
V0566	Secondary CDC Case Vehicle-estimater	8	Not applicable (no vehicle/no impact)	more
V0567	Secondary CDC Case Vehicle - Crush (CM)	998	Not Applicable	more

V0568	Secondary CDC Case Vehicle-clock #1	98	Not Applicable	more
V0569	Secondary CDC Case Vehicle-Letter 1 #1	00	Missing Data/Not applicable	more
V0570	Secondary CDC Case Vehicle-Letter 2 #1	00	Missing Data/Not applicable	more
V0571	Secondary CDC Case Vehicle-Letter 3 #1	00	Missing Data/Not applicable	more
V0572	Secondary CDC Case Vehicle-Letter 4 #1	00	Missing Data/Not applicable	more
V0573	Secondary CDC Case Vehicle Extent #1	00	Missing Data/Not applicable	more
V0574	Secondary CDC - Case Vehicle Assoc CDC - CDC #1	9800000		_
V0575	Secondary CDC Case Vehicle-clock #2	98	Not Applicable	<u>more</u>
V0576	Secondary CDC Case Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0577	Secondary CDC Case Vehicle-Letter 2 #2	00	Missing Data/Not applicable	more
V0578	Secondary CDC Case Vehicle-Letter 3 #2	00	Missing Data/Not applicable	more
V0579	Secondary CDC Case Vehicle-Letter 4 #2	00	Missing Data/Not applicable	more
V0580	Secondary CDC Case Vehicle Extent #2	00	Missing Data/Not applicable	more
V0581	Secondary CDC - Case Vehicle Assoc CDC - CDC #2	9800000		_
V0582	Secondary CDC Contacted Vehicle - Impact Speed (kph)	998	Not Applicable	more
V0583	Secondary CDC Contacted Vehicle-estimater	8	Not applicable (no vehicle/no impact)	more
V0584	Secondary CDC Contacted Vehicle - Crush (CM)	998	Not Applicable	more
V0585	Secondary CDC Contacted Vehicle-clock #1	98	Not Applicable	more
V0586	Secondary CDC Contacted Vehicle-Letter 1 #1	00	Missing Data/Not applicable	more
V0587	Secondary CDC Contacted Vehicle-Letter 2 #1	00	Missing Data/Not applicable	more
V0588	Secondary CDC Contacted Vehicle-Letter 3 #1	00	Missing Data/Not applicable	more

V0589	Secondary CDC Contacted Vehicle-Letter 4 #1	00	Missing Data/Not applicable	more
V0590	Secondary CDC Contacted Vehicle Extent #1	00	Missing Data/Not applicable	<u>more</u>
V0591	Secondary CDC - Contacted Vehicle Assoc CDC - CDC #1	9800000		
V0592	Secondary CDC Contacted Vehicle-clock #2	98	Not Applicable	more
V0593	Secondary CDC Contacted Vehicle-Letter 1 #2	00	Missing Data/Not applicable	more
V0594	Secondary CDC Contacted Vehicle-Letter 2 #2	00	Missing Data/Not applicable	more
V0595	Secondary CDC Contacted Vehicle-Letter 3 #2	00	Missing Data/Not applicable	more
V0596	Secondary CDC Contacted Vehicle-Letter 4 #2	00	Missing Data/Not applicable	<u>more</u>
V0597	Secondary CDC Contacted Vehicle Extent #2	00	Missing Data/Not applicable	more
V0598	Secondary CDC - Contacted Vehicle Assoc CDC - CDC #2	9800000		

### **Crash Reconstruction**

Variable Number	Variable Name	Code Value	Code Description	Other Options
V0601	Primary Delta-V Case Vehicle-event #	1	Event number 1	<u>more</u>
V0602	Primary Delta V Case Vehicle - Total Delta V	034 kph	kph	more
V0603	Primary delta-V Case Vehicle -LONGITUD	-034		_
V0604	Primary delta-V Case Vehicle-Lateral	-006		_
V0605	Primary Delta V Case Vehicle - Energy Dissipated by Crush (k	0119		_
V0606	Primary Delta-V Case Vehicle-Reconstruction	22	Reconstructed, moderate confidence level	more
V0607	Primary Delta-V Case Vehicle- Mode	2	CDC & detailed damage	more
V0608	Primary Delta V Contacted	043 kph	kph	more

	Vehicle - Total Delta V			
V0609	Primary delta-V Contacted Vehicle-LONGITUD	-043		_
V0610	Primary delta-V Contacted Vehicle-Lateral	0000		_
V0611	Primary delta-V Contacted Vehicle - Energy Dissipated by Cru	0076		_
V0612	Secondary Delta-V Case Vehicle-event #	8	Not applicable	more
V0613	Secondary Delta V Case Vehicle - Total Delta V	888	Not applicable	more
V0614	Secondarydelta-V Case Vehicle -LONGITUD	8888		
V0615	Secondary delta-V Case Vehicle-Lateral	8888		_
V0616	Secondary delta-V Case Vehicle - Energy Dissipated by Crush	8888		
V0617	Secondary Delta-V Case Vehicle-Reconstruction	88	Not applicable	more
V0618	Secondary Delta-V Case Vehicle- Mode	8	Not applicable	more
V0619	Secondary Delta V Contacted Vehicle - Total Delta V	888	Not applicable	more
V0620	Secondary delta-V Contacted Vehicle-LONGITUD	8888		
V0621	Secondary delta-V Contacted Vehicle-Lateral	8888		
V0622	Secondary delta-V Contacted Vehicle - Energy Dissipated By C	8888		_
V0623	Primary EBS Case Vehicle- event #	1	Event number 1	more
V0624	Primary EBS Case Vehicle - Total EBS	051 kph	kph	more
V0625	Primary EBS Case Vehicle - LONGITUD	-050		
V0626	Primary EBS Case Vehicle- Lateral	-009		_
V0627	Primary EBS Case Vehicle - Energy Dissipated by Crush (kj)	0119		_
	Primary EBS Case Vehicle-		Reconstructed, moderate confidence	

V0628	Reconstruction	22	level	more
V0629	Primary EBS Case Vehicle- Mode	2	CDC & detailed damage	more
V0630	Primary EBS Contacted Vehicle - Total EBS	999	Unknown	more
V0631	Primary EBS Contacted Vehicle-LONGITUD	9999		_
V0632	Primary EBS Contacted Vehicle-Lateral	9999		_
V0633	Primary EBS Contact Vehicle - Energy Dissipated by Crush (kj	9999		_
V0634	Secondary EBS Case Vehicle-event #	8	Not applicable	more
V0635	Secondary EBS Case Vehicle - Total EBS	888	Not Applicable	more
V0636	Secondary EBS Case Vehicle -LONGITUD	8888		_
V0637	Secondary EBS Case Vehicle-Lateral	8888		_
V0638	Secondary EBS Case Vehicle - Energy Dissipated by Crush (kj)	8888		_
V0639	Secondary EBS Case Vehicle-Reconstruction	88	Not applicable	more
V0640	Secondary EBS Case Vehicle- Mode	8	Not applicable	more
V0641	Secondary EBS Contacted Vehicle - Total EBS	888	Not Applicable	more
V0642	Secondary EBS Contacted Vehicle-LONGITUD	8888		_
V0643	Secondary EBS Contacted Vehicle-Lateral	8888		_
V0644	Secondary EBS Contact Vehicle - Energy Dissipated by Crush (	8888		
V0645	Specific Event # Case(1)	1	Event number 1	more
V0646	Plane of Impact Case Vehicle (1)	5	Other	more
V0647	Direct Damage Length (DDL) - Case Vehicle (1)	114 cm	cm	more
V0648	Direct Damage Maximum Crush - Case Vehicle (1)	057 cm	cm	more

V0649	Direct and Induced Damage Length in CM	139 cm	cm	more
V0650	Field C1 - Case Vehicle (1)	007 cm	cm	<u>more</u>
V0651	Field C2 - Case Vehicle (1)	020 cm	cm	<u>more</u>
V0652	Field C3 - Case Vehicle (1)	026 cm	cm	<u>more</u>
V0653	Field C4 - Case Vehicle (1)	034 cm	cm	more
V0654	Field C5 - Case Vehicle (1)	041 cm	cm	<u>more</u>
V0655	Field C6 - Case Vehicle (1)	031 cm	cm	<u>more</u>
V0656	Direct Damage D Value = The Center of Direct Damage Offset t	+023 cm	Offset (cm)	more
V0657	Specific Event # Case(2)	1	Event number 1	<u>more</u>
V0658	Plane of Impact Case Vehicle (2)	5	Other	more
V0659	Direct Damage Length (DDL) - Case Vehicle (2)	114 cm	cm	more
V0660	Direct Damage MaximumCrush - Case Vehicle (2)	057 cm	cm	more
V0661	Direct and Induced Damage Length in CM	139 cm	cm	more
V0662	Field C1 - Case Vehicle (2)	007 cm	cm	<u>more</u>
V0663	Field C2 - Case Vehicle (2)	020 cm	cm	<u>more</u>
V0664	Field C3 - Case Vehicle (2)	026 cm	cm	more
V0665	Field C4 - Case Vehicle (2)	034 cm	cm	more
V0666	Field C5 - Case Vehicle (2)	041 cm	cm	<u>more</u>
V0667	Field C6 - Case Vehicle (2)	031 cm	cm	<u>more</u>
V0668	Direct Damage D Value = The Center of Direct Damage Offset t	+023 cm	cm	more
V0669	Specific Event # Cont(1)	1	Event number 1	<u>more</u>
V0670	Plane of Impact Contacted Vehicle(1)	9	Unknown	more
V0671	Direct Damage Length (DDL) - Contacted Vehicle (1)	999	Unknown	more
V0672	Direct Damage Maximum Crush - Contacted Vehicle (1)	999	Unknown	more
V0673	Field L - Contacted Vehicle (1)	999	Unknown	more
	Field C1 - Contacted Vehicle			

V0674	(1)	999	Unknown	<u>more</u>
V0675	Field C2 - Contacted Vehicle (1)	999	Unknown	<u>more</u>
V0676	Field C3 - Contacted Vehicle (1)	999	Unknown	<u>more</u>
V0677	Field C4 - Contacted Vehicle (1)	999	Unknown	more
V0678	Field C5 - Contacted Vehicle (1)	999	Unknown	more
V0679	Field C6 - Contacted Vehicle (1)	999	Unknown	more
V0680	Direct Damage D Value = The Center of Direct Damage Offset t	+999 cm	offset (cm)	more
V0681	Specific Event # Contacted Vehicle (2)	1	Event number	<u>more</u>
V0682	Plane of Impact Contacted Vehicle(2)	9	Unknown	<u>more</u>
V0683	Direct Damage Length (DDL) - Contacted Vehicle (2)	999	Unknown	more
V0684	Direct Damage Maximum Crush - Contacted Vehicle (2)	999	Unknown	more
V0685	Direct and Induced Damage Length in CM	999	Unknown	more
V0686	Field C1 - Contacted Vehicle (2)	999	Unknown	more
V0687	Field C2 - Contacted Vehicle (2)	999	Unknown	more
V0688	Field C3 - Contacted Vehicle (2)	999	Unknown	more
V0689	Field C4 - Contacted Vehicle (2)	999	Unknown	more
V0690	Field C5 - Contacted Vehicle (2)	999	Unknown	more
V0691	Field C6 - Contacted Vehicle (2)	999	Unknown	more
V0692	Direct Damage D Value = The Center of Direct Damage Offset t	+999 cm	Offset (cm)	more

Variable Number	Variable Name	Code Value	Code Description	Other Options
V0701	Left Front Wheel Damaged	0	No	more
V0702	Right Front Wheel Damaged	0	No	more
V0703	Right Rear Wheel Damaged	0	No	<u>more</u>
V0704	Left Rear Wheel Damaged	0	No	more
V0705	Left Front Tire Tread Type	4	All Weather	more
V0706	Right Front Tire Tread Type	4	All Weather	more
V0707	Right Rear Tire Tread Type	4	All Weather	more
V0708	Left Rear Tire Tread Type	4	All Weather	<u>more</u>
V0709	Left Front Carcass Construction	3	Radial	more
V0710	Right Front Carcass Construction	3	Radial	more
V0711	Right Rear Carcass Construction	3	Radial	more
V0712	Left Rear Carcass Construction	3	Radial	more
V0713	Left Front Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0714	Right Front Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0715	Right Rear Tire Condition Precrash	0	Normal - no pre-crash problems	more
V0716	Left Rear Tire Condition Precrash	0	Normal - no pre-crash problems	more
<b>X/II/I</b> / I	Left Front Tire Condition Postcrash	0	Normal - no damage to tire	more
V0718	Right Front Tire Condition Postcrash	0	Normal - no damage to tire	more
V0719	Right Rear Tire Condition Postcrash	0	Normal - no damage to tire	more
V0720	Left Rear Tire Condition Postcrash	0	Normal - no damage to tire	more
V0721	Left Front Tire Involvement	0	No	more
V0722	Right Front Tire Involvement	0	No	more
V0723	Right Rear Tire Involvement	0	No	more
V0724	Left Rear Tire Involvement	0	No	more
V0725	Left Front Tire Size	P22560R16		
V0726	Right Front Tire Size	P22560R16		

V0727	Right Rear Tire Size	P22560R16		_
V0728	Left Rear Tire Size	P22560R16	_	
V0729	Left Front Tire Pressure (recorded in psi)	25.5 psi	Actual tire pressure in psi	more
V0730	Right Front Tire Pressure (recorded in psi)	28.5 psi	Actual tire pressure in psi	more
V0731	Right Rear Tire Pressure (recorded in psi)	19.0 psi	Actual tire pressure in psi	more
V0732	Left Rear Tire Pressure (recorded in psi)	28.5 psi	Actual tire pressure in psi	more
V0733	Left Front Tread Depth	07	07/32"	more
V0734	Right Front Tread Depth	07	07/32"	<u>more</u>
V0735	Right Rear Tread Depth	07	07/32"	more
V0736	Left Rear Tread Depth	07	07/32"	<u>more</u>

### **Case Vehicle Fuel Tank**

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Variable Number	Variable Name	Code Value	Code Description	Other Options
V0801	Propulsive Fuel Type	1	Gasoline	more
V0802	Main Tank Location	133	Right of frame laterally - above vertically	more
V0803	Main Filler Cap Location	113	Left of frame laterally - above vertically	more
V0804	Main Tank Material	1	Steel	more
V0805	Aux Tank Type	8	Not applicable (not equipped)	<u>more</u>
V0806	Aux Tank Location	888	Not applicable (not equipped)	<u>more</u>
V0807	Aux Filler Cap Location	888	Not applicable (not equipped)	more
V0808	Aux Tank Material	8	Not applicable	more

# **Case Vehicle Fuel Leakage**

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Vari Num	able ber	Variable Name	Code Value	Code Description	Other Options
V09	901	Fuel Leakage From Crash	0	No	<u>more</u>

Case Vehicle Fire Back to Top

Variable Number	Variable Name	Code Value	Code Description	Other Options

### **Case Vehicle Exterior**

Variable Number	Variable Name	Code Value	Code Description	Other Options
V1101	Hood Latch Released	0	No	more
V1102	Hood Latch Damaged	1	Yes	
V1103	Hood Latch Jammed	1	Yes	more
V1104	Left Hood Hinge Damaged	0	No	more
V1105	Left Hood Hinge Separated	8	Not applicable	more
V1106	Right Hood Hinge Damaged	1	Yes	more
V1107	Right Hood Hinge Separated	8	Not applicable	more
V1108	Hood Remained On Vehicle	1	Yes	<u>more</u>
V1109	Rear Hood Edge Elevated	1	Yes	more
V1110	Edge Contacted Windshield	1	Yes	more
V1111	Edge Penetrated Windshield	0	No	more
V1112	Hood Latch Location	1	Front of Vehicle	more
V1113	Eng/transmissn Mount Separated	0	No	more
V1114	Steering Column Flex Couplng	9	9 Unknown if equipped	
V1115	Steering Column Coupling Dam	9	9 Unknown	
V1116	Steering Column Coupling Separated	9	9 Unknown	
V1117	Eng Comp Telescopng Unit	88	Not currently collected	more
V1118	Compartment Unit's Original/telescoped Length Difference	888	Not currently collected	more
V1119	Left Side Body Mount Separated	0	No	more
V1120	Upper Left A-pillar Sep	0	No	more
V1121	Lower Left A-pillar Sep	0	No	more
V1122	Upper Left B-pillar Sep	0	No	more
V1123	Lower Left B-pillar Sep	0	0 No	
V1124	Upper Left C-pillar Sep	0	0 No	
V1125	Lower Left C-pillar Sep	0	No	
V1126	Upper Left D-pillar Sep	8	Not applicable (not equipped)	more
V1127	Lower Left D-pillar Sep	8	Not applicable (not equipped)	more

V1128	Left Front Door Opening Cause	00	Door did not open	more
V1129	Left Rear Door Opening Cause		Door did not open	<u>more</u>
V1130	Left Front Door Jammed Oclosed		No	more
V1131	Left Rear Door Jammed Closed	0	No	more
V1132	Van Left Rear Door Type	8	Not applicable (not a van)	<u>more</u>
V1133	Left Front Glazing Availability	2	Closed	more
V1134	Left Rear Glazing Availability	2	Closed	more
V1135	Lr2 Glazing Availability	1	Fixed	more
V1136	Left Front Glazing Damage	0	No damage	more
V1137	Left Rear Glazing Damage	0	No damage	more
V1138	Lr2 Glazing Damage	0	No damage	more
V1139	Rear Door Type	0	No door (includes pickups)	more
V1140	Rear Door Opening Cause	8	Not applicable (no rear door)	more
V1141	Rear Door Jammed Closed	8	Not applicable (no rear door)	more
V1142	Rear Glazng Availability	8	Not Applicable (No Door)	<u>more</u>
V1143	Rear Glazing Damage	8	Not Applicable (No Door)	more
V1144	Luggage Partition Damaged	0	No	more
V1145	Spare Tire Status	8	Not collected	more
V1146	Trailer Hitch Type	0	No hitch	<u>more</u>
V1147	Trailer Type	0	No trailer	more
V1148	Rght Side Body Mount Separated	0	No	more
V1149	Upper Right A-pillar Separated	0	No	<u>more</u>
V1150	Lower Right A-pillar Separated	0	No	more
V1151	Upper Right B-pillar Separated	0	No	more
V1152	Lower Right B-pillar Separated	0	No	more
V1153	Upper Right C-pillar Separated	0	No	more
V1154	Lower Right C-pillar Separated	0	0 No	
V1155	Upper Right D-pillar	8	Not applicable (not equipped)	more

	Separated			
V1156	Lower Right D-pillar Separated	8	Not applicable (not equipped)	<u>more</u>
V1157	Right Front Door Opening Cause	00	Door did not open	<u>more</u>
V1158	Right Rear Door Opening Cause	00	Door did not open	<u>more</u>
V1159	Right Front Door Jammed Closed	0	No	<u>more</u>
V1160	Right Rear Door Jammed Closed	0	No	<u>more</u>
V1161	Van Right-rear Door Type	8	Not applicable (not a van)	<u>more</u>
V1162	Right Front Glazing Availability	2	Closed	more
V1163	Right Rear Glazing Availability	2	Closed	<u>more</u>
V1164	Rr2 Glazing Availability	1	Fixed	more
V1165	Right Front Glazing Damage	0	No damage	more
V1166	Right Rear Glazing Damage	0	No damage	more
V1167	Rr2 Glazing Damage	0	No damage	more
V1168	Windshield Cracked	1	Yes	more
V1169	Windshield Broken	0	No Click for Windshield Damage figure	<u>more</u>
V1170	Occupant Cracked/Broke Wndshld	0	No	more
V1171	Bond Separation Extent	0	None	more
V1172	Windshield Code	97	Click for Windshield Mark figure	more
V1173	Did Sun Roof/T-Roof Open	8	Not Applicable	more

# Case Vehicle Steering Column/Rim

Variable Number	Variable Name	Code Value	Code Description	
V1201	Steering Wheel Rim Damage	2	Severely bent	more
V1202	Number of Steering Wheel Spokes	2	2 2 spokes	
V1203	Steering Wheel Spoke Damage	2	2 Severely bent	
V1204	Steering Wheel Hub Damage	1	Occupant contact	more
V1205	Steering Wheel Location of Rim Damage	6	Other	<u>more</u>

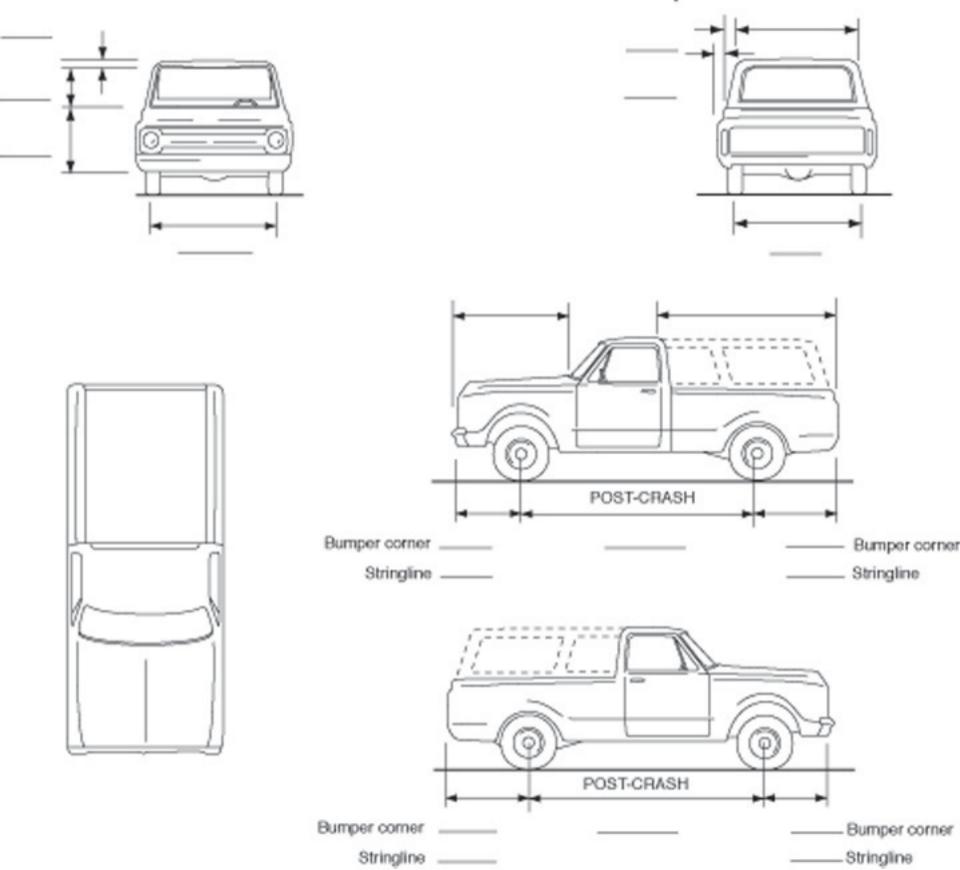
V1206	Aftermarket Add-on Device	0	None	<u>more</u>
V1207	Column Tilt Feature	2	Up	more
V1208	Column Swing-away Feature	0	Not equipped	<u>more</u>
V1209	Column Telescoping Feature	0	Not equipped	more
V1210	Wheel Energy Absorb Device	8	8 Not currently collected	
V1211	Wheel EA Device's original/damage Dimension Difference	888	Not collected	
V1212	Column Energy Absorb Device	88	Not collected	more
V1213	Col EA Device's Orig/compressed (or Extruded) Length Diff	888	Not collected	
V1214	Shear Capsule Separation	888	Not collected	
V1215	Column Vertical Rotation	1	1 Upward apparent rotation	
V1216	Column Lateral Rotation	2	2 Right apparent rotation	

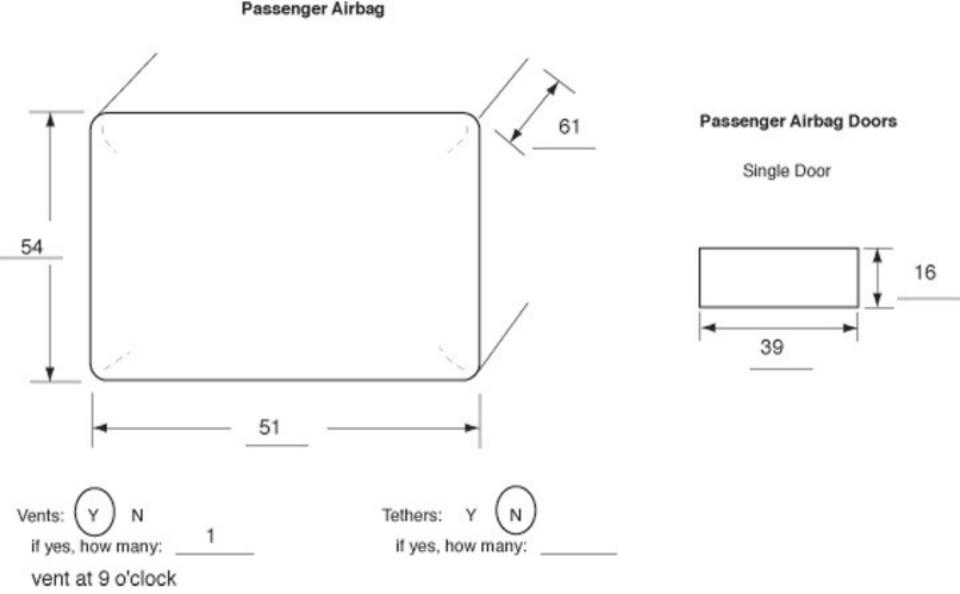
## **Case Vehicle Intrusion**

Variable Number	Variable Name	Code Value	Code Description	Other Options				
V1301	Was Occupant Compartment Intruded		No Click for Intrusion Worksheet figure Click for Intrusion figure	more				
V1302	Was Intrusn Catastrophic	8	Not applicable	more				
V1303	Intrusion #1	99	Unknown or data not collected	more				
V1304	Occupant Space Number(1)	99	Unknown or data not collected	more				
V1305	Intrud Component/obj (1)	99	Unknown or data not collected	more				
V1306	Associate Event Numb (1)	9	Unknown or data not collected	<u>more</u>				

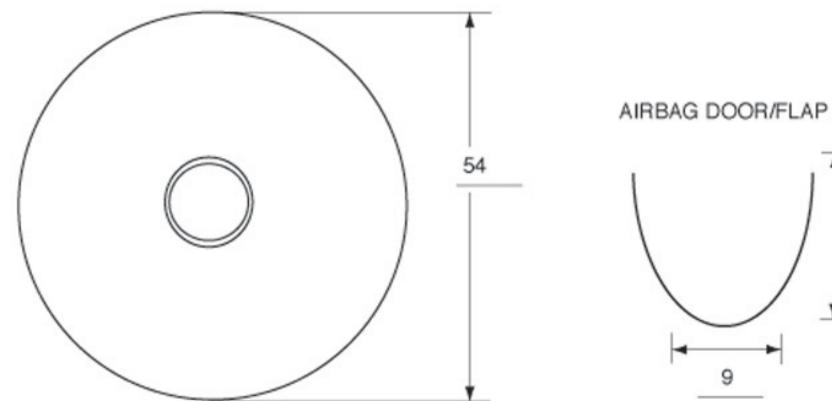
#### MEASUREMENTS IN CENTIMETERS

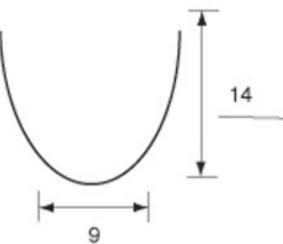
# This vehicle was unavailable for inspection





# Driver Airbag

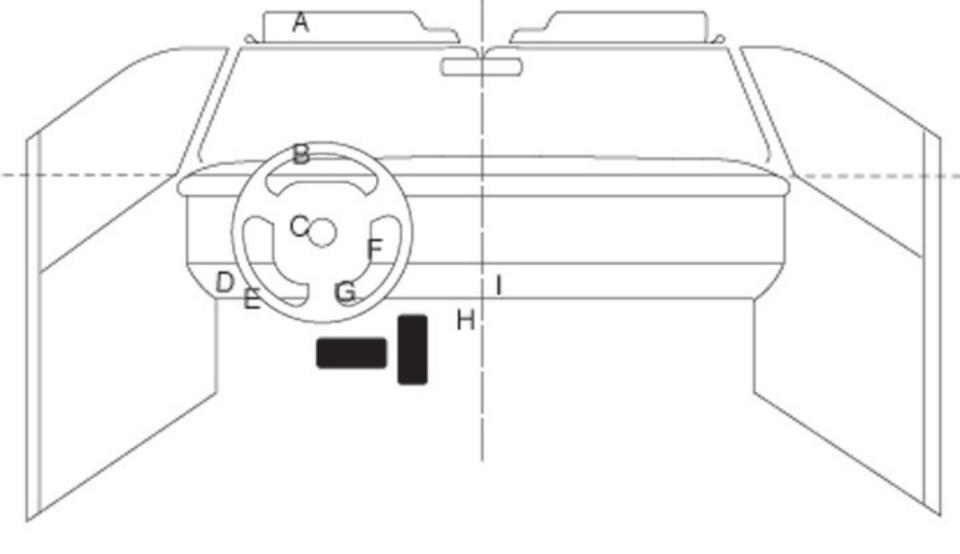




Vents: (Y if yes, how many: 2 vents at 11 and 1 o'clock

Tethers:

if yes, how many:



A = Sunvisor - scuff, hair, and vanity mirror broken

B = Steering wheel rim - cracked, bent

C = Steering wheel spoke - scuff

D = Knee bolster - crack

E = Knee bolster - bent

F = Steering column - scuff

G = Knee bolster - scuff

H = Knee bolster - dented, cracked and displaced forward

I = Ashtray and bracket - broken/bent

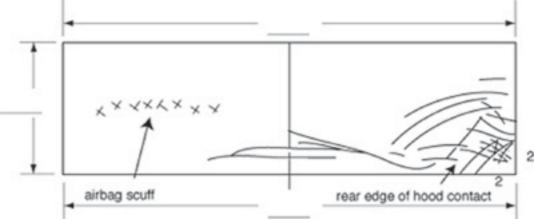
### 1 = Definitely 2 = Probably 3 = Possible

# INTRUSION IT-1

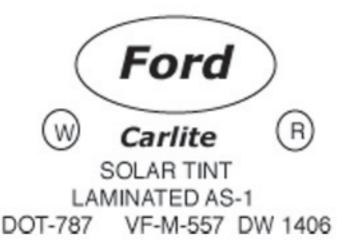
	(All Measurements Are in Centimeters)						Dominant
Location of Intrusion	Intruded Component	Comparison Value	-	Intruded Value	=	Intrusion	Crush Direction
	None		_		=		
			_		=		
			_		=		
			_		=		
			_		=		
			-		=		
			_		=		
			_		=		
			-		=		
			_		=		
			_		=		
			_		=		

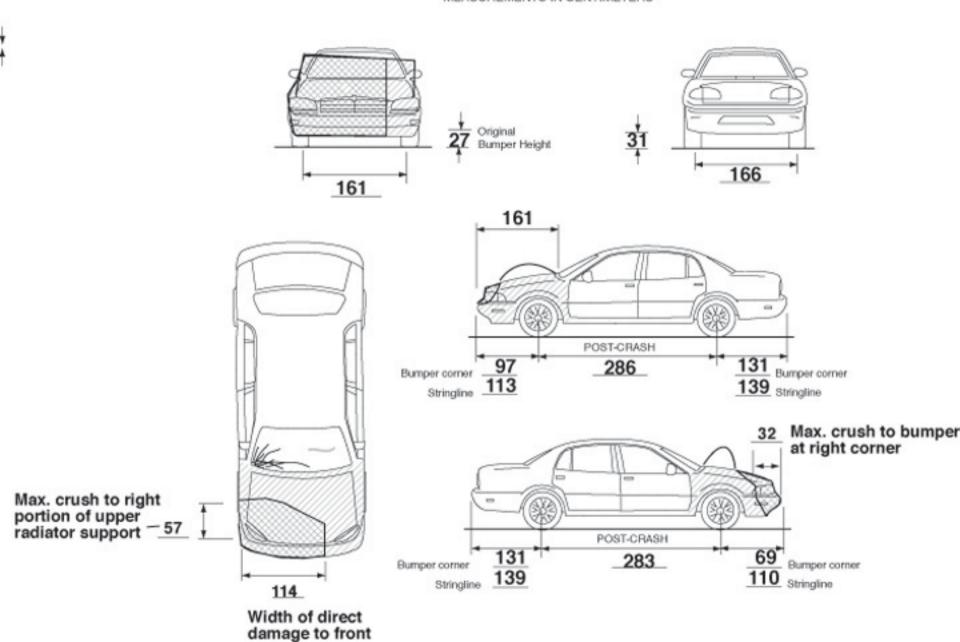
### OCCUPANT CONTACT WORKSHEET

	Interior Component	Occupant No. if	Body Region		Confidence Level of Contact
Contact	Contacted	Known	if Known	Supporting Physical Evidence	Point
А	Sunvisor	Dr	Head	Scuff, hair, and vanity mirror broken	1
В	Steering- wheel rim	Dr	Chest	Cracked, bent	1
С	Steering- wheel spoke	Dr	Chest	Scuff	2
D	Knee bolster	Dr	Lt. LX	Crack	1
Е	Knee bolster	Dr	Lt. LX	Bent	1
F	Steering column	Dr	Lt. LX	Scuff	1
G	Knee bolster	Dr	Rt. LX	Scuff	1
Н	Knee bolster	Dr	Rt. knee	Dented, cracked and displaced forward	1
I	Ashtray & bracket	Dr	Rt. knee	Broken and bent	1



# WINDSHIELD MARK ON CASE VEHICLE:











































## **DEATH or SERIOUS INJURY can occur.**

- Children 12 and under can be killed by the air bag.
- . The BACK SEAT is the SAFEST place for children.
- . NEVER put a rear-lacing shild seat in the front.
- "Sit as far back as possible from the air bag.
- ALWAYS use SEAT BELTS and CHILD RESTRAINTS.





































































