



Vehicle Research and Test Center

Milwaukee Ford Windstar Rear Axle Beam Corrosion Failure

Presentation to ODI
Management and
NCC 07/27/2010

PE10-016




Milwaukee Ford Windstar Rear Axle Beam Corrosion Failure

The complaint vehicle (VOQ10342863) was inspected on 07/26/10 with a Ford representative. Then the accident site was visited (without the Ford rep). The rear axle had corroded and failed on the left side. The Panhard rod buckled allowing the left rear trailing arm to twist and leaving substantial left rear fender-well tire marks. The vehicle was reported to have been traveling at 50 mph in the third lane when the axle failed, the driver lost control, hit the Jersey barrier, and both front air bags deployed.

VOQ 10342863

Form Approved O.M.B. No. 2127-0028

 DOT Auto Safety Hotline Vehicle Owner's Questionnaire To Report Vehicle Safety Defects 1-888-DASH-2-DOT (1-888-327-4236) INTERNET: www.nhtsa.dot.gov/hotline		FOR AGENCY USE ONLY 100148 Date Received 13-JUL-2010 Repository <input type="checkbox"/> Reference No. 10342863	
OWNER INFORMATION (Type or Print)			
Name		Daytime Telephone Number	E-mail Address
Address		Evening Telephone Number	
City	State	Zip Code	
<small>The information you provide will be used to identify potential safety-related defects. We may share your information with the applicable vehicle manufacturer during an investigation or recall in accordance with the routine uses described in the agency's Privacy Act notice. See 49 FR 53971 (Sep. 3, 2004).</small>			
VEHICLE INFORMATION			
17 digit Vehicle Identification Number Located at bottom of windshield on driver's side 2FM2AS349		Make FORD	Model Year 2000
Date Purchased	Dealer's Name and Telephone Number		Model WINDSTAR
Original Owner <input type="checkbox"/>	Dealer's City	State	Zip Code
Transmission Type <input type="checkbox"/> Antilock Brakes <input type="checkbox"/> Cruise Control	Powertrain	Multiple Failures	Incident Date(s) 09-JUL-2010
FAILED COMPONENT(S)/PART(S) INFORMATION			
Vehicle Component Code: 022000 SUSPENSION: REAR		Failure Mileage 101000	Failure Speed 60
ADDITIONAL ITEMS TO BE COMPLETED WHEN REPORTING A TIRE FAILURE			
Tire Make	Tire Model (Name or Number)	Tire Size (Example P215/65R15)	
DOT No. (Examples DOTMALSABC036)	<input type="checkbox"/> Original Equipment <input type="checkbox"/> Prior Repair	Failure Location:	
Tire Component Code		Tire Failure Type:	
ADDITIONAL ITEMS TO BE COMPLETED WHEN REPORTING A CHILD SEAT FAILURE			
Make:	Date Manufactured:	Model No./Name:	
Seat Type:	Installation System:		
Child Seat Component Code:	Failed Part:		
APPLICABLE INCIDENT INFORMATION <small>(Please describe in detail the incident(s), failure(s), crash(es), and injury(ies).)</small>			
Crash <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fire <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Persons Injured 1	Number of Deaths 0
			Reported to Police Y
<small>Narrative Description of Incident(s), Crash(es), and Injury(ies). Please describe (1) events leading up to the failure, (2) failure and its consequences, and (3) what was done to correct the failure; i.e., parts repaired or replaced (and if old part is available).</small>			
TL-THE CONTACT OWNS A 2000 FORD WINDSTAR. THE CONTACT WAS DRIVING AT APPROXIMATELY 60 MPH WHEN HE SUDDENLY LOST ALL CONTROL OF THE VEHICLE. THE VEHICLE VEERED TO THE RIGHT AND HIT A CONCRETE BARRIER ON THE FRONT SIDE AND THE VEHICLE WAS THEN FLIPPED A DIFFERENT DIRECTION. THE AIR BAGS DID DEPLOY. THE CONTACT SHUT THE VEHICLE OFF. A POLICE REPORT WAS FILED. THE CONTACT SUSTAINED MINOR CUTS AND BRUISES AS A RESULT. THE VEHICLE WAS TOTALED AS A RESULT OF THE CRASH. THE VEHICLE WAS INSPECTED AND THE CONTACT WAS INFORMED THAT THE REAR AXLE WAS BROKEN AND WAS THE CAUSE OF THE CRASH. THE CONTACT HAD NOT SPOKEN WITH THE MANUFACTURER AT THE TIME OF THE COMPLAINT. THE CURRENT AND FAILURE MILEAGES WERE APPROXIMATELY 101,000-BK.			
<small>Include, if available: Police/Fire Department Report, Photos, and Repair Invoice.</small>		ATTACH ADDITIONAL SHEETS IF NECESSARY	
<small>The Privacy Act of 1974-Public Law 93-579 This information is requested pursuant to authority vested in the National Highway Traffic Safety Act and subsequent amendments. You are under no obligation to respond to this questionnaire. Your response may be used to assist the NHTSA in determining whether a Manufacturer should take appropriate action to correct a safety defect. If the NHTSA proceeds with administrative enforcement or litigation against a manufacturer, your response, or a statistical summary thereof, may be used in support of the agency's action.</small>			

POLICE #	<input checked="" type="checkbox"/> Reportable Accident		<input type="checkbox"/> On Emergency	<input type="checkbox"/> Amended	DOT Document Number BMMD8V9	Document Override Number
	Agency Accident Number			Police Number		
	4 - Accident Date 07/09/2010	5 - Time of Accident (Military Time) 1022	6 - Total Units 01	7 - Total Injured 00	8 - Total Killed 00	
	2 - County		3 - Municipality		11 - Accident Location NON-INTERSECTION	
	14 - On Hwy No. EB	14 - On Street Name	14 - Bus/FirstRamp	15 - Est. Dist 0.10	RMI M	16 - Hwy. Dir EAST
	16 - Fd/Rd Hwy No.	16 - Front/Rd Street Name	10 - Business/Frontage/Ramp			
	17 - Structure Type UTILITY #	17 - Structure Number HME3	12 - Latitude	13 - Longitude *		
	80 - First Harmful Event MEDIAN BARRIER			93 - Manner of Collision NO COLLISION WITH MOTOR VEHICLE IN TRANSPORT		
	112 - Access Control FULL CONTROL	113 - Road Curvature STRAIGHT	113 - Road Terrain LEVEL/FLAT	Surface Type CONCRETE - 1		
	115 - Traffic Way DIVIDED-HIGHWAY-MEDIAN-STRIP-WITH-TRAFFIC-BARRIER					
117 - Relation To Roadway ON-ROADWAY						
114 - Light Condition DAYLIGHT		116 - Road Surface Condition DRY		118 - Weather CLEAR		
<input type="checkbox"/> Hit and Run	<input checked="" type="checkbox"/> Government Property	<input type="checkbox"/> Fire	<input type="checkbox"/> Photos Taken	<input type="checkbox"/> Trailer or Towed		
<input type="checkbox"/> Truck, Bus, or Hazardous Materials	<input type="checkbox"/> Load Spillage	<input type="checkbox"/> Construction Zone	<input type="checkbox"/> Names Exchanged			
101 <input type="checkbox"/> Supplemental Reports	102 <input type="checkbox"/> Witness Statements	103 <input type="checkbox"/> Measurements Taken		79 - E M S Number		

OPERATOR/PEDESTRIAN 01	Unit Status		61 - Most Harmful Event: Collision With MEDIAN BARRIER		23 - Dir Of Travel EAST	24 - Speed Limit 50
	36 - Operating as Classified D CLASS	37 - Endorsements		35 <input type="checkbox"/> Operating Commercial Motor Vehicle		
	29 - Driver's License Number		30 - State WI	31 - Expiration Year 2017	34 - On Duty Accident	
	21 - Operator/Pedestrian Last Name		25 - First Name		26 - Middle Initial	25 - Suffix
	32 - Date Of Birth		33 - Sex			
	26 - Address Street & Number					26 - PO Box
	27 - City		27 - State	27 - Zip Code	28 - Telephone Number	
	38 - Seat Position FRONT-SEAT-LEFT-SIDE-(MC/BIKE DRIVER, TRAIN CONDUCTOR)			40 - Safety Equipment SHOULDER-BELT-AND-LAP-BELT-USED		
	38 - Injury Severity N - NO APPARENT INJURY		41 - Airbag DEPLOYED	42 - Ejected NOT-EJECTED		44 <input type="checkbox"/> Medical Transport
	43 - Trapped/Entangled NOT-TRAPPED		62 - Pedestrian Location		62 - Pedestrian Action	
	119 - What Driver Was Doing GOING-STRAIGHT			120 - Traffic Control NO-CONTROL		62 - No. of Citations Issued
	64 - 1st Statute No.	64 - 2nd Statute No.	64 - 3rd Statute No.	64 - 4th Statute No.	64 - 5th Statute No.	
	122 - Driver Factors NOT-APPLICABLE					
	68 - Driver or Pedestrian Cond APPEARED NORMAL		89 - Substance Presence NEITHER-ALCOHOL-NOR-DRUGS-PRESENT			
	90 - Alcohol Test TEST NOT GIVEN		90 - Alcohol Content		91 - Drug Test TEST-NOT-GIVEN	

91 - Drugs Reported

124 - Highway Factors
NOT-APPLICABLE

Vehicle

VEHICLE 01	21 - Unit Type AUTOMOBILE		Vehicle Type PASSENGER-CAR		22 - Total Occupants 1	
	56 - License Plate Number		57 - Plate Type A	58 - State VA	59 - Exp Year 2005	
	55 - Vehicle Identification Number 2FMZA5349					
	60 - Year 2000	51 - Make FORD	62 - Model WINDSTAR S	63 - Body Style VN	54 - Color RED	100 - Skidmarks to Inspect (R)
	94 - Vehicle Damage FRONT, FRONT PASSENGER SIDE, REAR, FRONT DRIVER SIDE					
95 - Extent Of Damage VERY-SEVERE		96 - <input checked="" type="checkbox"/> Vehicle Towed Due To Damage		97 - Vehicle Removed By N&S TOWING		
123 - Vehicle Factors NOT-APPLICABLE						

Vehicle Owner

VEH OWNER 01	45 - <input checked="" type="checkbox"/> Vehicle Owner Same As Operator					
	46 - Vehicle Owner Last Name		46 - First Name		46 - Middle Initial	46 - Suffix
	46 - Company Name					
	47 - Address Street & Number			47 - PO Box		
	48 - City		48 - State	48 - Zip Code	49 - Telephone Number	

Insurance

INS 01	63 - Insurer's Insurance Company		60 - <input checked="" type="checkbox"/> Policy Holder Same As Owner		
	64 - Policy Holder Last Name		61 - Policy Holder First Name		
	61 - Policy Holder Company				

School Bus

BUS 01	Bus Traveling to/from <input type="radio"/> To <input type="radio"/> From		School Name	Body Make	Seating Capacity
	School District Contracted With				

Property

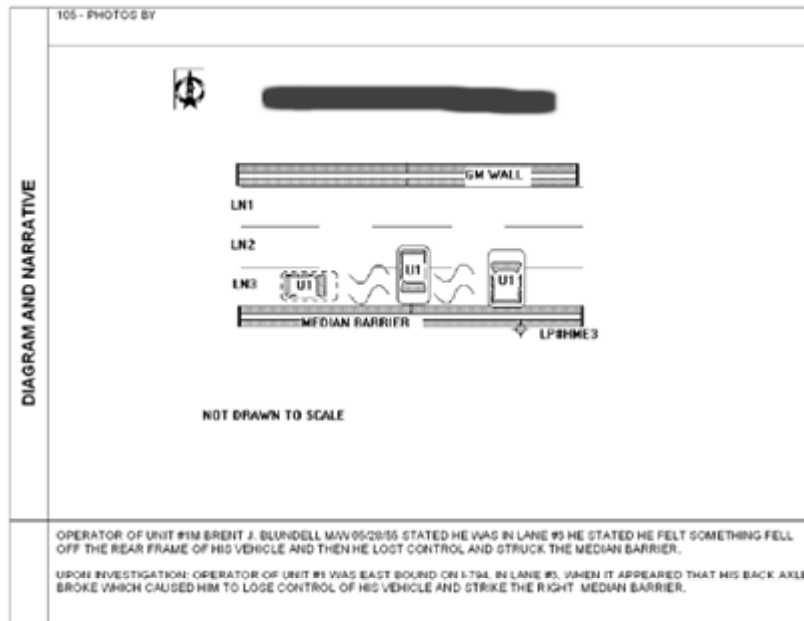
Organization Type GOVERNMENT	64 - Property Owner Last Name	64 - First Name	64 - Middle Initial	64 - Suffix
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Motor Vehicle BMMD8V9 Page 3 of 4
 Incident Report MV4000e 01/2005

PROPERTY OWNER 01	84 - Company Name		Government Property Type		
	85 - Address Street & Number		FEDERAL/STATE		
	86 - City		85 - PO Box	7	
	86 - State	86 - Zip Code	87 - Telephone Number		
	83 - Government Damage Tag Number				

Fixed Objects Struck			
82 - Striking Unit	82 - Object Struck	82 - Striking Unit	82 - Object Struck
1	MEDIAN-BARRIER		
82 - Striking Unit	82 - Object Struck	82 - Striking Unit	82 - Object Struck
82 - Striking Unit	82 - Object Struck	82 - Striking Unit	82 - Object Struck

Diagram and Narrative



Officer Information

OFFICER INFORMATION	125 - Officer Last Name	125 - First Name	125 - Middle Initial	151 - Officer ID
	129 - Law Enforcement Agency No.	130 - Law Enforcement Agency Name		
	126 - Law Enforcement Agency Address: Street & Number			
	127 - City	127 - State	127 - Zip Code	128 - Telephone Number
	132 - Date Notified 07/09/2010	133 - Time Notified (Military Time) 1023	134 - Time Arrived (Military Time) 1036	135 - Date Of Report 07/09/2010
	Agency Accident Number	Police Number	19 - Special Study	
	18 - Agency Space 6X			

American Family Insurance documentation

[REDACTED]

[REDACTED]

[REDACTED]

2000	FORD	WINDSTAR
VIN: 2FMZA534	[REDACTED]	Loss Type: Collision
[REDACTED]	[REDACTED]	Dispatch: 07/15/2010

VIN data plate

MFD. BY FORD MOTOR CO.
DATE: 06/00
FRONT GAWR: 1315KG/2900LB
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
VIN: 2FMZA [REDACTED] TYPE: MPV
MAXIMUM LOAD = OCCUPANTS + LUGGAGE = 544KG/1200LB
OCCUPANTS LUGGAGE
2 408KG/0900LB
4 272KG/0600LB
7 068KG/0150LB
TIRE: P225/60R16
PRESSURE(FR): 241 kPa/35 PSI COLD
PRESSURE(RR): 241 kPa/35 PSI COLD
[REDACTED]
2FMZA5349
TRAILER TOWING - SEE OWNER GUIDE
EXT PNT: D6 B2 IRC: 41 IDSO: F0011
BRK INT TR TP/PS R AXLE TR SPR 9LMAB T0060
D 2H K 15 L EE E
MADE IN CANADA CBC ▽F8DB-5420472-AB

Front view of vehicle



Left side of vehicle



Left side of vehicle



Both air bags deployed



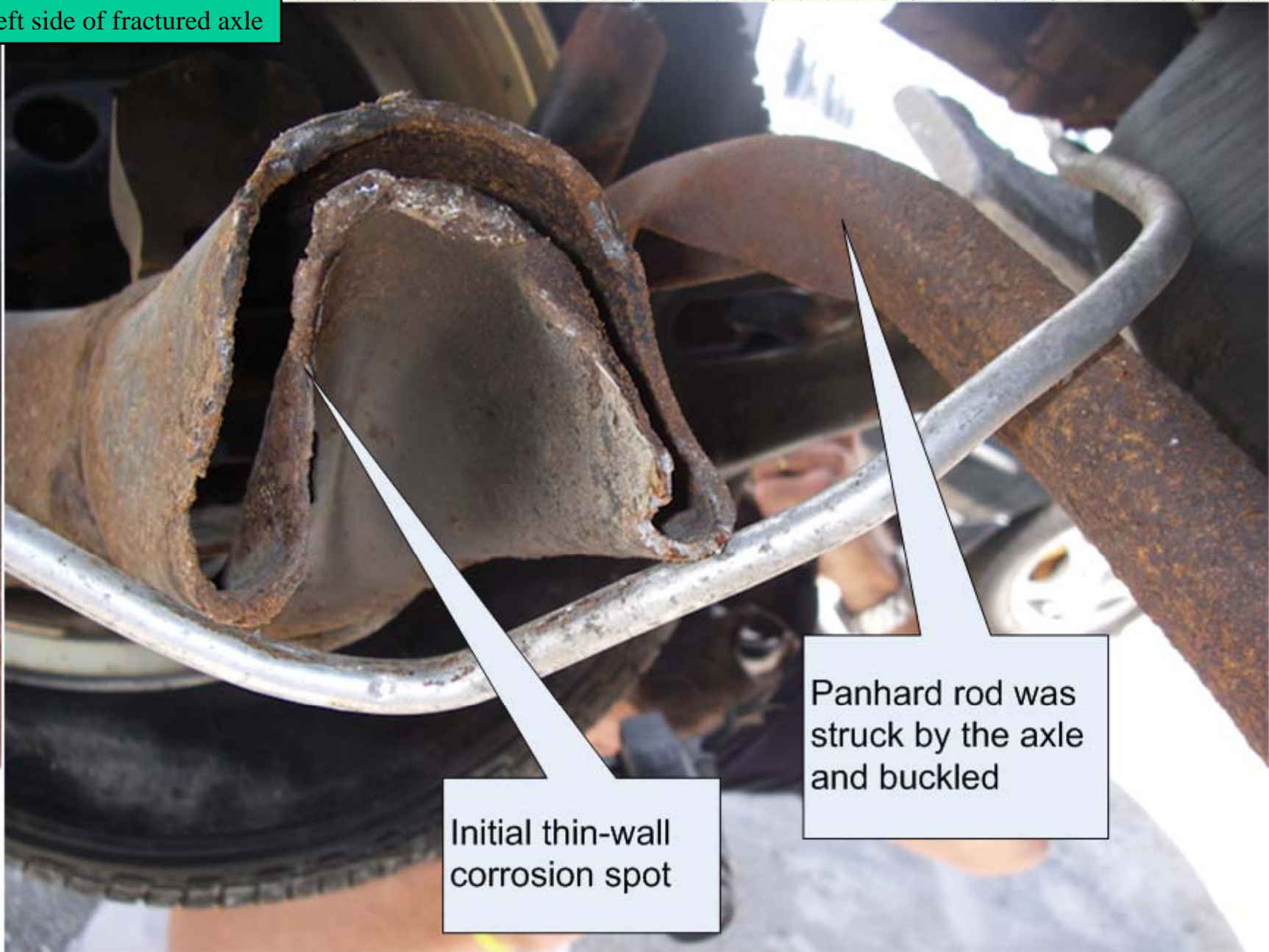
Front view after vehicle was raised



Rear view after vehicle was raised



Left side of fractured axle



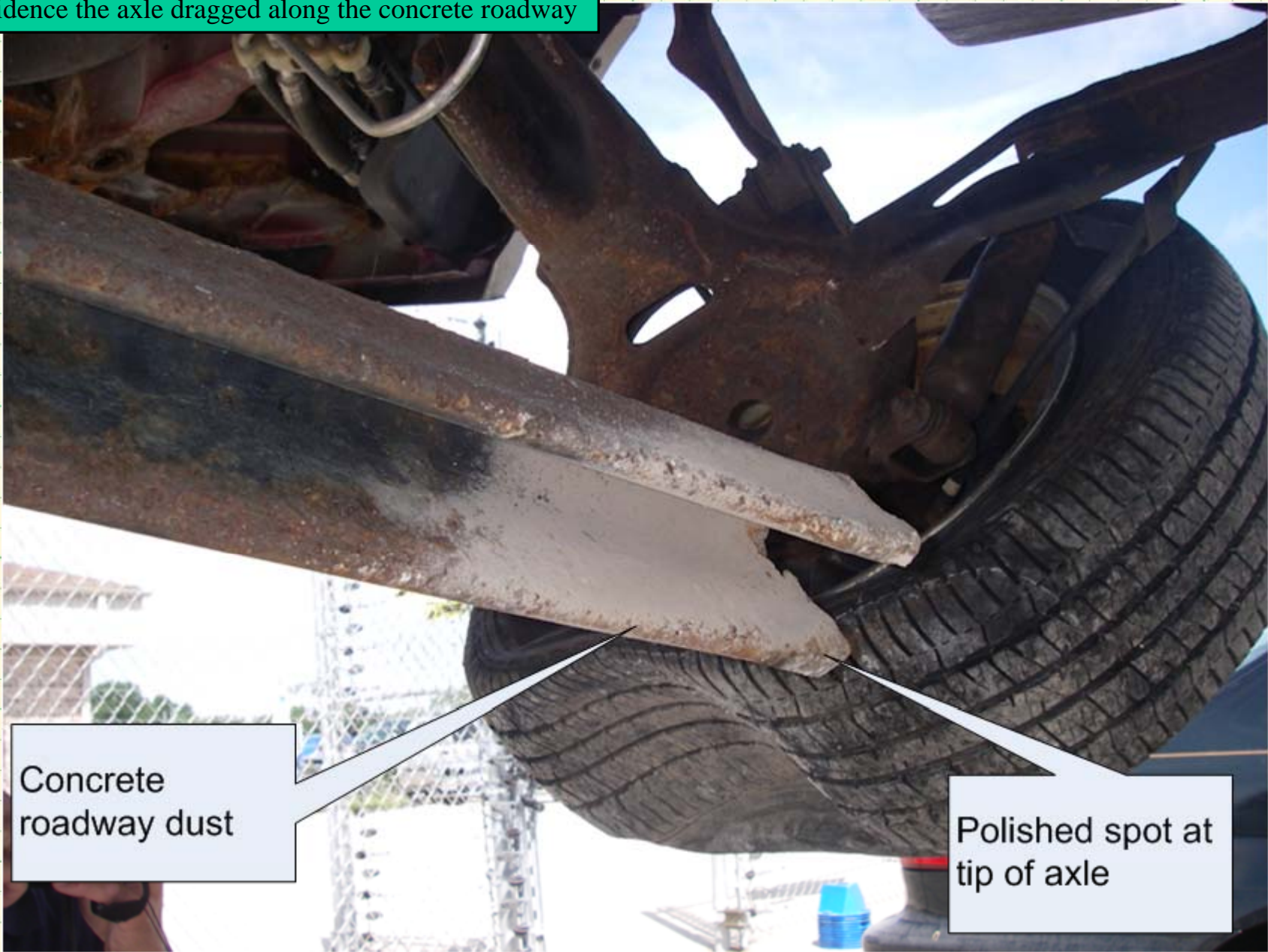
Initial thin-wall
corrosion spot

Panhard rod was
struck by the axle
and buckled

Right side of fractured axle



Evidence the axle dragged along the concrete roadway



Concrete roadway dust

Polished spot at tip of axle

Left rear fender well tire marks



Right rear fender well tire marks



Left rear trailing arm as viewed from in front of the left rear wheel



Fuel tank was contacted by the axle



View of axle from below



General location of the accident



Note: no gouges could be located along the roadway surface

Apparent site of accident



The End

For more information contact:

Dan Pearse
Transportation Safety Engineer
United States Department of Transportation
National Highway Traffic Safety Administration
Vehicle Research and Test Center
Defects Analysis Group
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