



FACTUAL REPORT OF INVESTIGATION ATTACHMENT

Wisconsin State Patrol

Crash Reconstruction Mechanical Inspection

Excelsior, Wisconsin

HWY23FH012

(9 pages)

CRASH RECONSTRUCTION MECHANICAL INSPECTION WISCONSIN STATE PATROL

STATE PATROL CFS NUMBER: 000247-9220
 LOCAL CASE NUMBER (If applicable): SC23-04680
 MECHANICAL INSPECTOR: Insp. Ryan Schultz
 RECONSTRUCTIONIST: Deputy Bradley Lubert



Crash Location: State Highway 33 west of Northwoods	Date / Time of Inspection: 06/19/2023 10:30 A.M.	Inspection Location: Sauk County Impound
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GENERAL VEHICLE IDENTIFICATION / BODY CONDITION

Vehicle Year: 2010	Make: Ford	Model: F150	Type: Pickup	Color: Red	Registration Number: [REDACTED]	Registration State: WI
Vehicle Identification Number: 1FTEW1E83AF [REDACTED]		Odometer Reading: 207,869		Fuel Delivery Type: Carburetor <input type="checkbox"/> Fuel Injected <input checked="" type="checkbox"/>		
Engine Displacement/Cylinders: 4.6L V8 Gasoline		Drive Train Description: Four-wheel drive			Transmission Description: Automatic <input checked="" type="checkbox"/> Manual <input type="checkbox"/>	
Body/Frame Condition: Frontal body damage, frame good						
Bumper Condition: Front: Damaged Rear: Damaged						

GLASS / MIRRORS / SEATBELTS / ELECTRICAL / LIGHTING

** Note: Some of the following components may not be examined. Lamps, for example, may be analyzed by the Crash Reconstructionist as part of his/her investigation. **

● **Glass**

Windshield: Cracked	Rear Window: Intact	Notable View Obstruction(s): No	
Left Front Side Window: Broken out closed	Right Front Side Window: Intact closed	Left Rear Side Window: Broken out closed	Right Rear Side Window: Intact closed
Other Glass: N/A			

● **Mirrors**

Rear View Mirror: Intact	Left Outside Mirror: Housing: Missing Mirror: Missing	Right Outside Mirror: Housing: Intact Mirror: Intact
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GLASS / MIRRORS / SEATBELTS / ELECTRICAL / LIGHTING CONT.

• Seatbelts/Airbag deployment

Left Front Latch Works: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Left Front Pretensioner Deployment: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Front Center Latch Works: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Front Center Pretensioner Deployment: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Right Front Latch Works: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Right Front Pretensioner Deployment: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Left Rear Latch Works: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Left Rear Pretensioner Deployment: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Rear Center Latch Works: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Rear Center Pretensioner deployment: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Right Rear Latch Works: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Right Rear Pretensioner Deployment: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other Seat Belt Latches: N/A		Other Pretensioner Deployments: N/A	
Airbag Deployment: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Airbags Deployed (If Applicable): None		

• Interior/Settings

Battery: Good	Horn: Working	Transmission Position: Park	Headlamp Switch Position: Off
Instrument Panel: Responsive	Gauges: Responsive	Warning Lights: Driver door ajar	
Interior Fan Speed: 3	Fan Direction Setting: -	Temperature Setting: Cool	Hazard Lamp Switch Setting: Off
Windshield Wipers: Good	Wiper Setting Position: Good	Windshield Washer Fluid Level: Good	Fuel Level: 1/4
Diagnostic Trouble Code Scan: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Scan Information:			

• Lighting/Electrical

- Removed or inspected for hot shock: No

Left Headlamp: Assembly: Broken Operable: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Right Headlamp: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Left Front Turn Signal: Assembly: Broken Operable: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Right Front Turn Signal: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Left Tail Lamp: Assembly: Broken Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Right Tail Lamp: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Left Rear Turn Signal: Assembly: Broken Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Right Rear Turn Signal: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Left Stop Lamp: Assembly: Broken Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Right Stop Lamp: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	High Mount Stop Lamp: Assembly: Broken Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	License Plate Lamps: Assembly: Good Operable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Other Lamps: N/A			

ENGINE COMPARTMENT/OPERATIONAL CONTROLS:

Master Cylinder Condition: Good		Master Cylinder Fluid Level/Condition: Good	
Condition of Brake Lines: Good		Brake Pedal Condition: Good	Locking Ability (At Inspection): Locking
Parking Brake Condition: Good		Parking Brake Locking Ability (At inspection): Good	
Steering Type: Steering Gear Box <input type="checkbox"/> Rack and Pinion <input checked="" type="checkbox"/>		Power Steering Fluid Level/Condition: Full	
Steering Ability (At Inspection): Full steering no binding			
Throttle Type: Electronic <input checked="" type="checkbox"/> Cable <input type="checkbox"/>		Throttle Condition: Good	
Throttle Body Condition: Good		Throttle Body Obstructions: No	
Engine Oil Level: Good		Transmission Fluid Level: Sealed	
Coolant Level: Good		Fuel Lines: Good	

BRAKES / TIRES / WHEELS / SUSPENSION

• Left-Front Axle (Driver Side)

Tire Make/Model: Michelin Defender	Tire Size: 265/70R17	Tire Tread Depth: 13/32"	Air PSI: 35	Tire and Wheel Conditions: Both good
Brake Type: Disc <input checked="" type="checkbox"/> Drum <input type="checkbox"/>	Inner/Front Thickness: Adequate	Outer/Rear Thickness: Adequate	Condition of Pads/Shoes: Very good	
Rotor/Drum Condition: Very good	Caliper/Cylinder Condition: Good		ABS Sensor Condition: Good	
Tie Rod Condition: Good	Upper Ball Joint or Control Arm Condition: Good		Lower Ball Joint or Control Arm Condition: Good	
Suspension Type: Control arm w/MacPherson Strut	Suspension Components Condition: Good			Tire Date Code: 4021

• Right-Front Axle (Passenger Side)

Tire Make/Model: Michelin Defender	Tire Size: 265/70R17	Tire Tread Depth: 13/32"	Air PSI: 35	Tire and Wheel Conditions: Both good
Brake Type: Disc <input checked="" type="checkbox"/> Drum <input type="checkbox"/>	Inner/Front Thickness: Adequate	Outer/Rear Thickness: Adequate	Condition of Pads/Shoes: Very good	
Rotor/Drum Condition: Very good	Caliper/Cylinder Condition: Good		ABS Sensor Condition: Good	
Tie Rod Condition: Good	Upper Ball Joint or Control Arm Condition: Good		Lower Ball Joint or Control Arm Condition: Good	
Suspension Type: Control arm w/MacPherson Strut	Suspension Components Condition: Good			Tire Date Code: 4021

BRAKES / STEERING / TIRES / WHEELS / SUSPENSION CONT.

• **Left-Rear Axle (Driver Side)**

Tire Make/Model: Michelin Defender	Tire Size: 265/70R17	Tire Tread Depth: 13/32"	Air PSI: 35	Tire and Wheel Conditions: Good
Brake Type: Disc <input checked="" type="checkbox"/> Drum <input type="checkbox"/>	Inner/Front Thickness: Adequate	Outer/Rear Thickness: Adequate	Condition of Pads/Shoes: Very good	
Rotor/Drum Condition: Very good	Caliper/Cylinder Condition: Good		ABS Sensor Condition: Good	
Suspension Type: Leaf springs w/straight axle	Suspension Components Condition: Good			Tire Date Code: 4021

• **Right-Rear Axle (Passenger Side)**

Tire Make/Model: Michelin Defender	Tire Size: 265/70R17	Tire Tread Depth: 13/32"	Air PSI: 35	Tire and Wheel Conditions: Good
Brake Type: Disc <input checked="" type="checkbox"/> Drum <input type="checkbox"/>	Inner/Front Thickness: Adequate	Outer/Rear Thickness: Adequate	Condition of Pads/Shoes: Very good	
Rotor/Drum Condition: Very good	Caliper/Cylinder Condition: Good		ABS Sensor Condition: Good	
Suspension Type: Leaf spring w/straight axle	Suspension Components Condition: Good			Tire Date Code: 4021

OTHER/MISCELLANEOUS NOTES

Other: No recalls
Other: Test drive- good, no observed flaws in drivability.
Other:
Other:
Other:
Other:

CONCLUSION/INSPECTION SUMMARY

On June 19, 2023, I went to the Sauk County Sheriff's Office (SASO) impound in reference to a mechanical inspection 2010 Ford F150 pickup (Figure 1). The F150 had been involved in a fatal crash on State Highway 33 involving a pedestrian and a school bus. The F150 had been stored inside the SASO impound facility. I was able to complete a full mechanical inspection, and test drive of the F150.

I began my inspection with a walk around examination of the F150. I was unable to access the Federal Certification Label inside of the driver's door due to body damage. The F150 was a body on frame construction. The F150 had sustained moderate body damage to the cab, box, and body panels in the incident. I did not observe any functional damage.

I continued my inspection in the engine bay of the F150. The F150 was equipped with a 4.6L V8 gasoline engine and automatic transmission with four-wheel drive. The coolant system was intact and full. The windshield washer fluid reservoir was intact and full. The engine oil was full. The throttle system on the F150 was operated electronically. The throttle pedal traveled smoothly and returned to rest as designed. The brake system was undamaged in the crash. The brake fluid reservoir was intact, full, and attached to the master cylinder. The brake fluid lines leading from the master cylinder to the anti-lock brake system (ABS) modulator were intact. The brake lines leading from the ABS modulator to each wheel end were intact. The brake lines leading to each wheel end appeared to be in good condition and were free of excess rust or corrosion. The power steering system equipped in the F150 was a hydraulic rack and pinion system. The power steering system did not appear to suffer any damage in the crash. I was able to steer the F150 lock to lock without binding or defect.

I continued my inspection of the interior of the F150. The electrical system was responsive. The heating, ventilation, and air conditioning (HVAC) was intact and responsive. The gauges were all intact. All gauges cycled and rested at the correct value. The headlamp switch was in the "OFF" position. All seat belts were properly functional. The gear selector was in "P" for park. The foot pedals for the brake and throttle were both in good working condition. When pressed, the brake pedal traveled smoothly and provided firm resistance. With the brake pedal applied, all four brakes were capable of locking as designed. As mentioned above, the steering wheel was intact and able to steer the F150 smoothly. I did not note any defects.

I inspected the exterior lighting of the F150. The left-front facing lighting (head lamp, turn signal, and marker lamps) were damaged and inoperable. The left-rear facing lamps (tail lamp, turn signal, brake lamp) were all damaged and operable. The front and rear facing lamps on the right side of the F150 were intact and operable.

Based on the lack of functional damage present to the F150 I felt it was safe to start the engine and test drive it in the impound facility parking lot to test it for function. The engine in the F150 started, idled, and revved correctly and smoothly. The transmission shifted into gear smoothly and firmly locked into each gear without any defect noted. The F150 drove forward and backwards smoothly and stopped smoothly. I was able to conduct full steering maneuvers with the F150 without any binding. I did not note any "pull" in the steering or tracking while driving the F150. I did not note any defect present in the drivability of the F150.

I inspected the wheels and tires of the F150. All four tires were in compliance with Wisconsin State Statute for a minimum of 2/32" tire tread depth. All four wheels and tires were in good condition.

The F150 was equipped with control arms and MacPherson strut suspension at the front wheel ends. The front suspension and steering components all appeared to be in good working condition. The steering linkage was straight, tight, and intact. All joints were tight and free of defect.

The F150 was equipped with a straight axle and leaf spring rear suspension. All bushings, joints, springs, and mounting components appeared to be tightly mated and properly operational.

I inspected the brakes at each wheel end of the F150. All four brakes appeared to be in very good working condition. All brake pads were in good condition with adequate friction material remaining and were evenly worn. The backer plate for the brake pads still had visible part numbers indicating the pads were newer. All four brake rotors were worn smooth and had a reflective surface. As mentioned above, the brakes were still in very good working condition and able to lock at the time of inspection.

I conducted online research through Ford and the National Highway Traffic Safety Administration (NHTSA) on the F150. There were no active recalls or field service campaigns for the F150.

My inspection was completed on June 19, 2023. During the course of my inspection I noted that the Ford was appeared to be in good working condition prior to the crash. I did not note any functional defects that would have caused or contributed to the crash. Upon completion of my inspection the F150 was secured in the impound. This ended my involvement with the vehicle.

Respectfully Submitted,

Ryan Schultz

Inspector Ryan Schultz
Wisconsin State Patrol
ASE-5665-2227



APPENDIX



Figure 1 Insp. Schultz_jpeg-3255

REFERENCES

PHOTOGRAPHY

The following photographs were reviewed while completing this report:

1. Thirty-four (34) photographs, and one (1) video from the mechanical inspection taken by Inspector Ryan Schultz on June 19, 2023.

COMPUTER SOFTWARE/DATA

The following computer software programs or professional websites were utilized or consulted in preparing this report:

1. Computer Software Programs:

- A. Microsoft® Office Word 2013 – Word Processing Software.

2. Professional Websites:

- A. National Highway Transportation Safety Administration (NHTSA) Office of Defects Investigation – Safety Recall Information.

(<https://www.wodi.nhtsa.dot.gov/owners/SearchSafetyIssues>)

- B. Ford for vehicle recall information.

(<https://www.ford.com/support/recalls/>)

- C. Driverside-research on vehicle technical specifications by year, make, model.

(https://ds.aandrautoservice.com/?homepage_view=1)