

CQIS Reports for Inquiry RQ04-007

Inquiry: RQ04-007	Report No: 4GSA9093	Report Date: 7/19/2004	Source: CQIS
Model Year: 2003	Model: CRNVIC	VIN: 2FAFP71W53X [REDACTED]	PGM Type:
Symptoms: 3 06 2 99	CHASS. AIR LOSS	TIRES/WHEELS NOT LISTED	
Addl. Symptom:		Odometer: 85333 M	
Engine: 4.6L ROM B	Transmission: 4R70W	Build Date: 5/29/2002	Warranty Start: 11/27/2002
Dealer: 48663 PENN STATE POLICE	FCSD Region:	City: Harrisburg	State: PA
Customer First Name:	Last Name	City:	State:
Causal Component: 1007	WHEEL ASSY		Photo: 0

Comment Type: Comments:

CONCER Total sudden deflation of left front tire, causing loss of control and
CONCER crash of vehicle. Vehicle had the wheels replaced under previous recal
CONCER I, (03S05).
TECH/C Wheel is cracked along the weld for approx. 26', and approx. 1' wide w
TECH/C ith tire bead sticking through the crack.,
Vehicle is now severely wrec
TECH/C ked.

Warranty Claims

Claims for Inquiry: RQ04-007

Inquiry: RQ04-007

CLAIM_KEY: 2361543 RPR_DT: 8/7/2003 MILGE: 43220 TXN_CD: 03S05
MDL_YR: 2003 AWS_VL_CD: FB VIN_CD: 2FAFP71W53X [REDACTED]
PART_NUM_CAUS_PREF: * PRODN_DT: 5/29/2002
PART_NUM_CAUS_BASE: * WRTY_START_DT: 11/27/2002
PART_NUM_CAUS_SUFF: * TRANS_CD: C/DU
DEALER: "JOHN MEEGAN FORD, INC." ENG_CD: C/VN
CUST_CONC_CD: * COND_CD: * DLR_CD: 7441 ST_PROV_CD: PA CNTRY_SOLD: USA

CUST_TXT: CHECK FOR RECALL

TECH_TXT1: REPLACED 5 WHEELS AS PER RECALL

TECH_TXT2:

Ford Motor Company
Design Analysis Department
Engineering Report

Incident Description

On July 16, 2004, during a high speed pursuit, a Pennsylvania State Police Vehicle was involved in a single vehicle accident. The facts relevant to the accident, as reported to me, are as follows: At approximately 2140 hours a police officer driving a 2003 Crown Victoria Police Interceptor (CVPI) began to pursue a speeding motorcyclist. Pursuit lasted for approximately six miles at speeds reaching 100 plus mph. The CVPI entered into a moderate right curve. The vehicle then left the highway, crossed the median and the opposite lanes of traffic, and impacted a guardrail and slope behind the guardrail. The CVPI was damaged and the officer was injured.

Claim

The [REDACTED] conducted an inspection following the accident. A key finding was that the left front wheel fractured in the area of weld that joined the disc (the outboard component) to the rim (the inboard component). At this time the [REDACTED] believed that the fracture occurred prior to the vehicle leaving the roadway and caused a total sudden deflation of the tire. The left front wheel and tire were shipped to Ford Motor Company, Dearborn for further analysis.

Findings

To provide a basis for an accident reconstruction I arranged with [REDACTED] of [REDACTED] Transportation Division, to examine the accident vehicle and the accident site. During this examination, performed on July 26, 2004, the accident vehicle was photographed (photos attached as exhibit) and the site was videotaped. Observations of the site showed tire marks emanating from the point at which the vehicle left the highway, diagonally crossing the median, imprinting at the point where the vehicle left the median and crossed the opposite highway.

Analysis

Analysis of the left front wheel and tire showed the following:

- The tire did not disengage from the wheel
- A fracture between the wheel disc and the rim of approximately 180 degrees in length. Separation between the two wheel components was approximately ¼ inch at the widest point.
- A severe gouge in the inner surface of the rim. The gouge is located approximately 3 ½ - 5 inches from the rim flange. The spatial orientation of the gouge is consistent with that of the weld fracture separation indicating that the two occurred at the same instant. Metal filings at the end of the gouge (or material that is forced in the direction of the applied force) were oriented in a direction that could have only occurred if the wheel were traveling in reverse rotation. The gouge lined up with the bottom of the lower control arm ball stud.
- A pinhole crack in the weld in an area approximately opposite the fracture. The crack existence was verified by soaping the weld area and blowing air through the opposite side.

Analysis of the vehicle showed the following:

- Primary induced damage was to the front of the vehicle and somewhat biased to the left corner. Secondary induced damage was located on the vehicle right side indicating that the vehicle rotated counter-clockwise after first impact.

- Front suspension and steering components did not show any visible damage. The bottom surface of the left front lower control arm ball stud was scraped.

Analysis of the site showed the following:

- The vehicle first left the highway, left front tire leading, at an approximately shallow angle. The tire marks appeared to indicate that the tires were still inflated and the vehicle not yawing.
- The vehicle diagonally crossed the median, traveling approximately 370 feet on the median. The nature of the tire marks indicated that the tires were not deflated and that the vehicle was tracking in a straight path.
- The tire marks on the opposite highway indicated that the vehicle left the median and started to yaw. Additionally, there was no evidence of scrape marks either on the pavement or the wheel rim flange. Marks of the nature would be expected if the tire were totally deflated.
- The tire marks indicated that the vehicle (hence the left front wheel and tire) were always traveling in a forward rotational motion.

Summary

Based on the evidence available, the fracture of the wheel was caused by severe impact, most likely with the guard rail on the opposite highway. Tire marks and trajectory indicate that the vehicle traveled across the median with the left front tire not totally deflated. When the vehicle impacted the guard rail the left front wheel/tire came to zero velocity, reversed its direction as evidenced by the gouge, rotated counter-clockwise and impacted the right side of the vehicle.

S. W. Linovitz
Powertrain Department
Design Analysis Office
Ford Motor Company
September 13, 2004.



