



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation:	PE 11-001	Date Closed:	07/20/2011
Date Opened:	01/10/2011	Reviewer:	Bruce York-B
Investigator:	Peter Kivett		
Approver:	Frank Borris		
Subject:	RPM's surging during pump mode		

MANUFACTURER & PRODUCT INFORMATION

Manufacturer:	PIERCE MANUFACTURING
Products:	2007 Pierce Contender EV
Population:	107

Problem Description: Engine RPM's fluctuate while fire truck is in pump mode which causes changes in water pressure at the hose nozzle

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	0	17	17
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	0	21	21

***Description of Other:** Warranty Claims

ACTION / SUMMARY INFORMATION

Action: PE11-001 Has been upgraded to an Engineering Analysis (EA11-008).

Summary:

On January 10, 2011 the Office of Defects Investigation (ODI) opened Preliminary Evaluation (PE11-001) based on a product improvement program (PIP) (ODI TSB # 10036912) submitted by Caterpillar dated August 18, 2010. The PIP was for engine RPM's that could surge while in a water pumping mode on 2005 through 2009 Pierce fire trucks equipped with a Caterpillar C9 engine. This engine surge could cause a fluctuation in water pressure that is being directed onto a fire through a hose. The bulletin states that this condition in conjunction with other factors or circumstances could "result in a risk of personal injury or death." Caterpillar's product improvement program released information involving the installation of new engine software on the subject vehicles.

On April 11, 2011 ODI received Pierce's response to ODI's Information Request (IR) letter. Based on the information received, an ODI investigator contacted several fleets and complainants regarding this defect phenomena and everyone contacted expressed concern related to the inherent danger involved with pressure oscillations in a fire hose. Several fire fighters stated that the frequency of failure even after Software fixes have been performed per the PIP are still happening.

In a supplemental IR letter dated May 27, 2011 Pierce identified a total population of 241 vehicles with the C9 engine from MY 2005 - 2008. Pierce also specified that they had 15 unique complaints coupled with 2 complaints from Caterpillar; totaling 17 consumer complaints. These consumer complaints were for MY 2006 through 2008 fire trucks. Pierce had 2 warranty claims while Caterpillar had 19 warranty claims, totaling 21 warranty claims for this investigation. ODI notes that the complaints applied to 5 vehicles and the warranty claims applied to 5 different vehicles (based on VIN). There were multiple complaints or claims on one vehicle in some cases.

An ODI investigator spoke with a fire chief in Sherwood, AR who alleged a Caterpillar representative, on several

occasions, came to his fire house to fix the problem of engine surge while in water pumping mode. The Caterpillar technician installed several updates to modify the software which communicates with the engine and its fueling strategies (i.e. idle function). Allegedly, after each attempt to fix the problem a fire fighter would alert the fire chief that the problem persisted in spite of constant updates. The result of this malfunction puts fire fighters at risk.

ODI is concerned that a fire hose that does not function properly has safety ramifications to the user of the fire hose and others dependent on its performance. This Preliminary Evaluation is being closed and upgraded to an Engineering Analysis (EA11-008).