



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: EA 11-008
Prompted by: Peter Kivett
Date Opened: 06/27/2011
Investigator: Peter Kivett **Reviewer:** Bruce York-B
Approver: Frank Borris
Subject: Engine RPM's surging during pumping mode

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: PIERCE MANUFACTURING
Products: 2006-2008 Pierce Contender EV
Population: 241
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: This Engineering Analysis is opened

Summary:

On January 10, 2011 the Office of Defects Investigations (ODI) opened a 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 the vehicle was in a water pumping mode. This engine surge could cause fluctuations 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." The Caterpillar's product improvement program released information involving the installation of new engine software on certain fire trucks with C9 engines.

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 and all parties contacted expressed concern related to the inherent danger involved with pressure oscillations in a fire hose. Several fire fighters stated that the failures are continuing even after proposed software fixes have been performed per the PIP.

In a supplemental (IR) letter dated May 27, 2011 Pierce identified a total population of 241 vehicles with the C9 engine from MY 2006 - 2008. Pierce also specified that they had identified 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

tech 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 still existed in spite of constant updates. The result of this malfunction puts fire fighters at risk.

ODI believes that when firemen are working to extinguish a fire and in the effort to save lives, there is zero tolerance for a defective, pressure surging and improperly functional fire hose. Pierce claims that this alleged safety defect can have the potential to cause injury and may even result in the death of the firefighter. ODI deems it is vital to the mission of all emergency response vehicles that the intended equipment must work as designed, without compromise. Further investigation is warranted to ascertain the scope of this alleged safety defect. This Engineering Analysis is opened.