



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  
**Approver:** Frank Borris  
**Subject:** Engine RPM's surging during pumping mode

**Date Closed:** 11/09/2012  
**Reviewer:** Bruce York-B

## MANUFACTURER & PRODUCT INFORMATION

**Manufacturer:** Pierce Manufacturing  
**Products:** 2006-2008 Pierce Contender EV  
**Population:** 10

**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
<b>Complaints:</b>	0	17	17
<b>Crashes/Fires:</b>	0	0	0
<b>Injury Incidents:</b>	0	0	0
<b>Fatality Incidents:</b>	0	0	0
<b>Other*:</b>	0	21	21

\*Description of Other: Warranty reports. (Multiple reports on 4 vehicles)

## ACTION / SUMMARY INFORMATION

**Action:** This Engineering Analysis is close with a safety recall (12V-523).

### 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 intended to address engine RPMs that could surge while the fire fighting vehicle was in a water pumping mode. This engine surge could cause significant fluctuations in water pressure 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 PIP provided information involving the installation of new engine software on certain fire trucks with C9 engines.

On June 27, 2011 ODI upgraded its investigation to an Engineering Analysis. No information request (IR) letter was sent to Pierce, instead a field inspection of a Pierce fire truck was conducted. In August 2011 representatives from ODI, the Vehicle Research and Test Center and Pierce conducted an on-site fire truck performance inspection of a complaint vehicle in Sherwood, Arizona. The purpose was to jointly inspect a complaint vehicle that was recently outfitted with updated engine software. The Sherwood fire truck engine was started and remained idling while the fire truck was set in water pumping mode. The representatives were able to witness the effects of the new software with regards to engine surge and verified that the alleged defect did not exist during this vehicle examination. The new engine software corrected the problem of fire hose pressure fluctuations in water being directed onto a fire.

It was determined during the course of this investigation that the PIP released by Caterpillar and conducted on Pierce vehicles should be submitted to NHTSA as a safety recall. During discussions with NHTSA, Pierce was informed that NHTSA had authority over the safety of vehicles even when not in highway use. Following these discussions, Pierce agreed the PIP should be released as a safety recall. This Engineering Analysis is closed with a safety recall

(12V-523).